WAGO▸I/O▸SYSTEM 750

WAGO-I/O-*CHECK* 2

Manual

Technical description

Version 1.2.0

WAGO
INNOVATIVE CONNECTIONS

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Every conceivable measure has been taken to ensure the correctness and completeness of this documentation. However, as errors can never be fully excluded we would appreciate any information or ideas at any time.

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We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally trademark or patent protected.

TABLE OF CONTENTS

1 Important Comments

To ensure fast installation and start-up of the units described in this manual, we strongly recommend that the following information and explanations are carefully read and abided by.

1.1 Legal Principles

1.1.1 Copyright

This manual is copyrighted, together with all figures and illustrations contained therein. Any use of this manual which infringes the copyright provisions stipulated herein, is not permitted. Reproduction, translation and electronic and photo-technical archiving and amendments require the written consent of WAGO Kontakttechnik GmbH. Non-observance will entail the right of claims for damages.

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1.1.2 Personnel Qualification

The use of the product detailed in this manual is exclusively geared to specialists having qualifications in PLC programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the valid standards. WAGO Kontakttechnik GmbH declines all liability resulting from improper action and damage to WAGO products and third party products due to non-observance of the information contained in this manual.

1.1.3 Intended Use

For each individual application, the components supplied are to work with a dedicated hardware and software configuration. Modifications are only permitted within the framework of the possibilities documented in the manuals. All other changes to the hardware and/or software and the non-conforming use of the components entail the exclusion of liability on part of WAGO Kontakttechnik GmbH.

Please direct any requirements pertaining to a modified and/or new hardware or software configuration directly to WAGO Kontakttechnik GmbH.

1.2 Symbols

⚠	**Danger** Always abide by this information to protect persons from injury.
⚠	**Warning** Always abide by this information to prevent damage to the device.
⚠	**Attention** Marginal conditions must always be observed to ensure smooth operation.
ESD	**ESD** (Electrostatic Discharge) Warning of damage to the components by electrostatic discharge. Observe the precautionary measure for handling components at risk.
→	**Note** Routines or advice for efficient use of the device and software optimization.
i	**More information** References on additional literature, manuals, data sheets and INTERNET pages

1.3 Font Conventions

Italic	Names of path and files are marked italic i.e.: *C:\programs\WAGO-IO-CHECK*
Italic	Menu items are marked as bold italic i.e.: ***Save***
\	A backslash between two names marks a sequence of menu items i.e.: ***File\New***
END	Press buttons are marked as bold with small capitals i.e.: **ENTER**
< >	Keys are marked bold within angle brackets i.e.: **<F5>**
`Courier`	Program code is printed with the font `Courier`. i.e.: `END_VAR`

1.4 Number Notation

Number Code	Example	Note
Decimal	100	normal notation
Hexadecimal	0x64	C notation
Binary	'100' '0110.0100'	Within ', Nibble separated with dots

1.5 Scope

This manual describes the following components:

Item-No.	Components
759-302	WAGO-I/O-CHECK 2

1.6 Abbreviations

AO	Analog Output Module
AI	Analog Input Module
DI	Digital Input
DO	Digital Output
I/O	input/output

2 General

2.1 Scope of Delivery

WAGO-I/O-*CHECK* 2 comprises of the following components:

2 pcs installation CD-ROM

1 pc communication cable	Order No.: 750-920
1 pc documentation	on CD-ROM
1 pc Software Licence Agreement	on CD-ROM
= Start-up tool BR 750	**Order No.: 759-302**

2.2 System Configuration

Minimum system requirements:

PC	Pentium or better
Operating system	Microsoft Windows 98 SE, NT 4 SP 6 or better
Main memory	Windows 98: 16 MB Windows NT 4.0 or Windows 2000: 32 MB
	For the graphic representation of the node, we recommend to have your PC equipped with a higher capacity main memory.
Fixed disk storage	recommended: 20 MB
Monitor	VGA or better, recommended: Super VGA
Resolution	Min. 800 x 600, recommended 1024 x 768 with a display of 256 colours or better
Mouse	recommended
Disk drive	CD-ROM
Others	free serial interface, COM 1 ... 4

2.3 Installation

WAGO-I/O-*CHECK* 2 comes on CD-ROM and contains all program files required for the application. Installation of the programs does not differ from the installation method used for most other Windows 98 or Windows NT applications.

How to install **WAGO-I/O-*CHECK* 2**:

If Windows 98 or Windows NT are not active, start your operating system now.

Insert the installation CD-ROM in your CD-ROM drive.

If Autorun is active on your system, **WAGO-I/O-*CHECK* 2** is installed automatically and you can skip the next paragraph.

If the setup-program does not start automatically, open the Windows Explorer and select the desired CD-ROM drive. Start the installation with a double click on the „*Setup.exe*" file
or select in the Windows *Start Menu* the entry *Run* and enter the drive and the file name „*Setup.exe*" in the entry field, e. g. „A:*Setup.exe*". Start the installation by clicking the **OK** button.

Carry out the screen-dialog instructions in order to conduct the installation.

2.4 Uninstall

How to uninstall **WAGO-I/O-*CHECK* 2**:

From the Windows *Start* menu, select *Program*, and then *Control Panel*.

Double-click on *Add/Remove Programs*.

Select **WAGO-I/O-*CHECK* 2**

Click on **ADD/REMOVE**.

Follow the instructions on the screen to uninstall **WAGO-I/O-*CHECK*** from your system.

2.5 Start

WAGO-I/O-*CHECK* can be started in one of the following manners:

Start Menu

Click on the START symbol in the Windows task bar in order to open the *Start* menu.

Select the *Programs* option in the *Start* menu to open the *Programs* folder.

Select *Wago** to open the *Wago** folder.

Select *WAGO-IO-CHECK** in order to open the *WAGO-IO-CHECK** folder.

Click on the *WAGO-IO-CHECK* link.

* or the name you have selected

„Desktop" - Windows Explorer

WAGO-I/O-*CHECK* can be started with the „Desktop" symbol or the Windows Explorer by a double click on the *WagoCheck.exe* file in the „WAGO-IO-CHECK" folder or by labelling the file and pressing the **<Enter*>** key. The *WagoCheck.exe* file is on the drive and in the folder which you have entered at the time of installation. If you have not changed the default settings when installing, the *WagoCheck.exe* file is in the folder,

    C:\Programme\Wago\WAGO-IO-CHECK

* or CR, ↵

3 WAGO-I/O-CHECK Overview

Introduction

WAGO-I/O-CHECK Application

WAGO-I/O-CHECK Function

Operation

Controls (Overview)

Important Informations

Configure a communication connection

Determining the node configuration

Select the WAGO-I/O-CHECK operation mode

Selecting an I/O module

Display process data of a selected module

Set output process data of a selected module

Change parameters of a selected module

3.1 WAGO-I/O-CHECK Application

WAGO-I/O-*CHECK* is an easy to use Windows application that will allow the user to operate and represent a node from the **WAGO-I/O-SYSTEM 750** without the need to connect the node to a field bus system.

WAGO-I/O-*CHECK* was developed to be able to address individual nodes during the start-up phase without having to rely on an active field bus system.

Note:
Disconnect the node from the active field bus prior to processing the process data with **WAGO-I/O-*CHECK***.

WAGO-I/O-*CHECK* works with the components of the **WAGO-I/O-SYSTEM 750** independent of the coupler used. Exceptions will be described at the manual.

3.2 WAGO-I/O-CHECK Function

WAGO-I/O-*CHECK* reads the configuration of a connected node from the coupler and displays the node on the screen of your PC. The graphical representation of the node can be printed out together with a configuration list.

WAGO-I/O-*CHECK* allows the display and default entry of process data of individual I/O modules.

To ensure the communication between **WAGO-I/O-*CHECK*** and the node, the coupler is connected to a free serial interface (port) of your PC using the communication cable as part of our scope of delivery.

Note:
Disconnect the node from the active field bus prior to processing the process data with **WAGO-I/O-*CHECK***. Depending on the coupler setting, set outputs will be reset or remain set after disconnection.

Warning!
Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches) has no effect !

4 Controls (Overview)

The **WAGO-I/O-*CHECK*** application containes following operation elements:
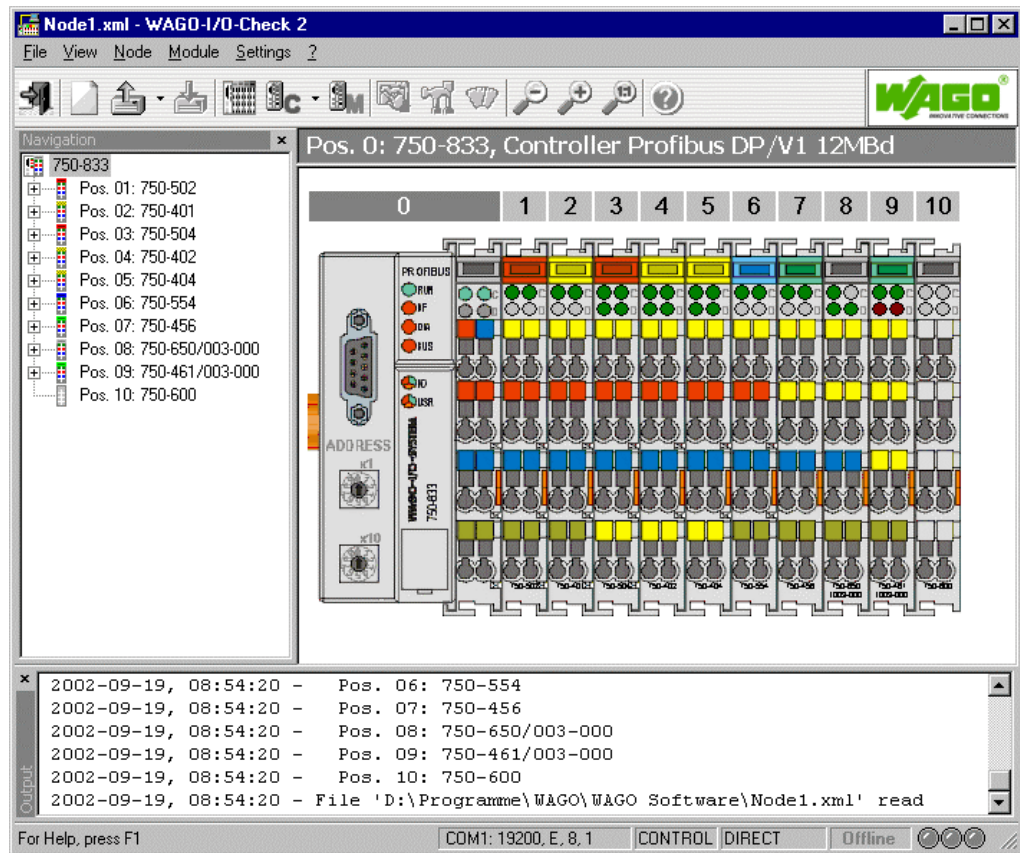
Titlebar

Menubars

Toolbars

Navigationbar

Node Display

Output Area

Statusbar

Dialog Boxes

4.1 Titlebar

The titlebar contains the following components:

	System menu button
Node1.xml	File name (Node description file)
WAGO-I/O-Check 2	Application name
-	Minimize button
□	Maximize button respective
↗	Restore button
✕	Close button

4.1.1 System Menu

The system menu contains the following commands:

Restore	Restores the size of the active window to original size.
Move	Moves the active window on the screen.
Change Size	Changes the size of the active window.
Minimize	Minimizes the size of the active window to symbol
Maximize	Maximizes the size of the active window to full screen.
Close	Closes the active window.

4.2 Menubars

4.2.1 Menubar of WAGO-I/O-*CHECK* operating interface

WAGO-I/O-*CHECK* contains the following main menus:

File View Node Module Settings ?

File	Commands to open, save and print node description files
View	Commands to view nodes
Node	Commands for communication with a node
Module	Commands for communication with a module
Settings	Commands to setup the program
?	Commands for online-help and program-information

4.2.1.1 Menu File

The *File* menu contains the following commands:

New	Ctrl+N	
Open...	Ctrl+O	
Save	Ctrl+S	
Save As...		
Print...	Ctrl+P	
Print Preview		
Print Setup...		
1 Node1.xml		
Exit		
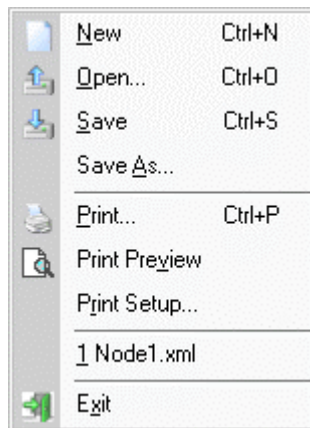
New	Initializes a new node.
Open	Opens an existing node description.
Save	Saves the active node description.
Save As...	Saves the active node description under a different filename or path.
Print	Prints the active node description.
Print Preview	Displays the node and the list of I/O modules in the same manner as they will be printed.
Print Setup	Setup printer and printer connection.

File List   List of the last four node descriptions processed.

Exit   Exits **WAGO-I/O-*CHECK***.

4.2.1.2   Menu View

The *View* menu contains the following commands:
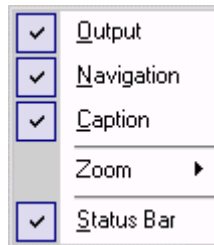
Output Area   Toggles the output area ON or OFF.

Navigationbar   Toggles the navigationbar ON or OFF.

Caption   Toggles the headline of the output area ON or OFF.

Zoom   Opens a submenu to reduce or enlarge the node view.

Statusbar   Toggles the statusbar ON or OFF.

4.2.1.3   Submenu Zoom

The *Zoom* submenu contains the following commands:
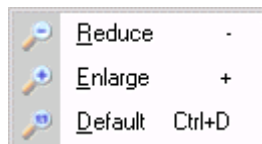
Reduce   Reduces the size of the node display.

Enlarge   Enlarges the size of the node display.

Default   Displays the node with its original size.

4.2.1.4   Menu Node

The *Node* menu contains the following commands:
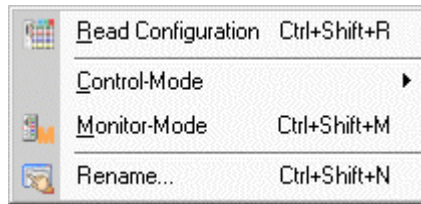
Read Configuration   Determines the configuration of the connected node.

Control-Mode   Opens a submenu to select a control-mode.

Monitor-Mode   Toggles the monitor-mode ON or OFF.

Rename ...   Changes the describing name of the node.

4.2.1.5   Submenu Control-Mode

The *Control-Mode* submenu contains the following commands:
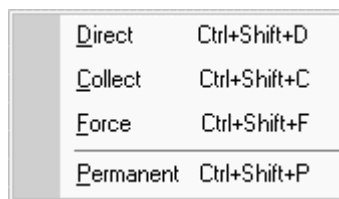
Direct   Toggles the Control-Mode Direct ON or OFF. The activated status is immediately available at the modules.

Collect   Toggles the Control-Mode Collect ON or OFF. The activated states of the outputs are stored and sent to the modules all at once on pressing a key.

Force   Toggles the Control-Mode Force ON or OFF. The activated output states are available at the modules only for the time of pressing a key.

Permanent   Toggles the Control-Mode Permanent ON or OFF. The activated output states are immediately available at the modules and remain active even after an interruption of the fieldbus connection to the node.

4.2.1.6   Menu Module

The *Module* menu contains the following commands:
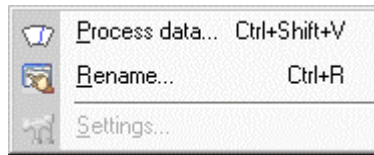
Process data ...   Shows the process data of the selected module.

Rename ...   Renames a digital I/O module. This command is only
available if a digital I/O module is selected.

Settings ...   Changes the parameters of the selected module. This
command is only available if the parameters of the selected
module are changeable (i.e 750-xxx/003-xxx).

4.2.1.7   Menu Settings

The *Settings* menu contains the following commands:
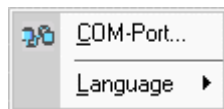
COM-Port ...   Configures the serial PC interface for communication with
the node.

Language   Opens a submenu to select the langage for the **WAGO-I/O-
CHECK** application.

4.2.1.8   Submenu Language

The *Language* submenu containes the following commands:
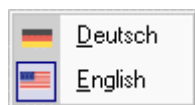
Use the commands to select the desired language for the WAGO-I/O-CHECK
application.

4.2.1.9 Menu Help

The *Help* menu contains the following commands to support the use of **WAGO-I/O-*CHECK***:

Help Topics
Help Index
Context Help
Using Help
Info
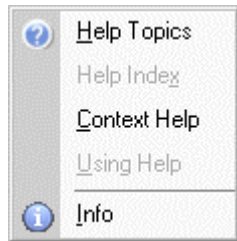
Help Topics | Opens the list of contents of the **WAGO-I/O-*CHECK*** help topics.

Help Index | Opens the index list of the **WAGO-I/O-*CHECK*** help topics.

Context Help | Shows help about selected parts of application.

Using Help | Shows help on using help.

Info | Displays copyright and version information about **WAGO-I/O-*CHECK***.

4.2.2 Menubar of AS-interface Process Data Dialog Box

The AS-interface process data dialog box in control-mode contains the following main menus:

File View Master Slave Extras ?

File | Commands to load and to save configuration files

View | Commands to view AS-interface slaves

Master | Commands to configure the AS-interface master

Slave | Commands to configure AS-interface slaves

Extras | Commands used for service

? | Commands for online-help

4.2.2.1   Menu File

The *File* menu contains the following commands:

	Load Configuration to AS-i Master...	Ctrl+L
	Save Configuration to file...	Ctrl+S
✖	Close AS-i Master Configuration	Alt+F4
	Exit WAGO-I/O-Check 2	
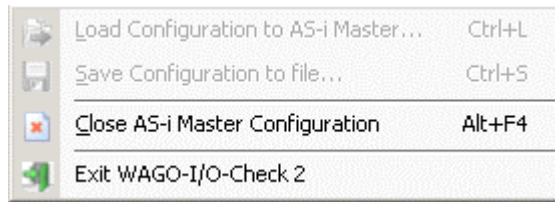
Load Configuration to AS-i Master   (This function is not yet available)

Save Configuration to file   (This function is not yet available)

Close AS-i Master Configuration   Closes the AS-interface Process Data Dialog Box.

Exit WAGO-I/O-CHECK 2   Exits WAGO-I/O-CHECK 2.

4.2.2.2   Menu View

The *View* menu contains the following commands:

✓	A-Slaves	Ctrl+Shift+A
	B-Slaves	Ctrl+Shift+B
	Safety at Work	Ctrl+Shift+S
	Refresh	F5

A-Slaves   shows a list of all Slaves in the stardard address area.

B-Slaves   shows a list of all Slaves in the extended address area.

Safety at Work   shows a list of all Safety at Work slaves in the stardard address area.

Refresh   Scans all slaves and refreshes the list.

4.2.2.3   Menu Master

The *Master* menu contains the following commands:
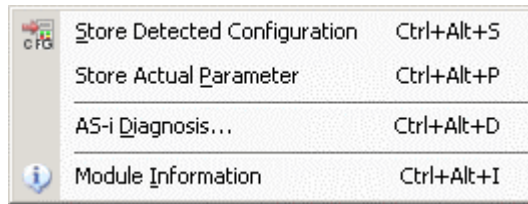
cFG	Store Detected Configuration	Ctrl+Alt+S
	Store Actual Parameter	Ctrl+Alt+P
	AS-i Diagnosis…	Ctrl+Alt+D
ⓘ	Module Information	Ctrl+Alt+I

Store Detected Configuration   Stores the actual configuration of all slaves as projected configuration in the master.

Store Actual Parameter   Stores the actually changed parameters of all slaves as permanent parameters in the master.

AS-i Diagnosis   Opens a dialog box with a list of all slaves with configuration errors.

Module Information   Opens a dialog box with informations about the AS-interface master.

4.2.2.4   Menu Slave

The *Slave* menu contains the following commands:

Store Detected Configuration	Ctrl+Shift+D
Set Projected Configuration	Ctrl+Shift+P
Set Actual Parmeter	Shift+A
Store Permanent Parameter	Shift+P
Safety at Work Monitor	Ctrl+Shift+M
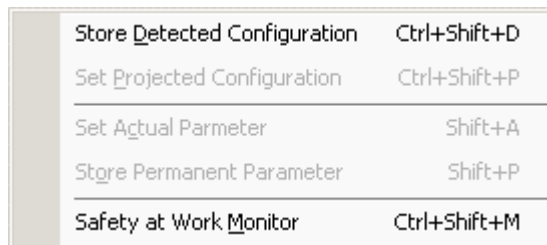
Store Detected Configuration   Stores the actual configuration of the selected slave as projected configuration. This button is only available in configuration mode.

Set Projected Configuration   Stores the adjusted configuration of the selected slave in the AS-interface master. This button is only available in configuration mode.

Set Actual Parameter   Sends the adusted parameters to the selected slave. These parameters are volatile and are lost with a voltage failure.

Store Permanent Parameter   Stores the adjusted parameters of the selected slave non-volatile in the master. These parameters will be transferred to the slave when the master is switched on.

Safety at Work Monitor   Marks the selected slave as a Safety at Work
                         Monitor.

4.2.2.5   Menu Extras

The *Extras* menu contains the following commands:

	Raw Data	Ctrl+Shift+R
✓	Cyclic Flags	Ctrl+Shift+C
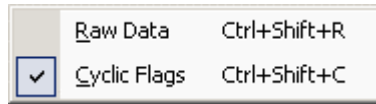
Raw Data   Opens two dialog boxes with input and output raw data of
                  the AS-interface master.

Cyclic Flags   Starts the cyclic transmission of the AS-interface flags.

4.2.2.6   Menu Help

The *Help* menu contains the following commands:

ⓘ	Help	F1
	Context Help	Shift+F1
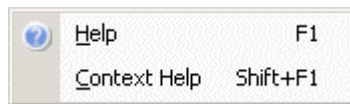
Help   Opens the list of contents of the WAGO-I/O-CHECK help
                  topics.

Context Help   Shows help about selected parts of application.

4.3 Toolbars

The toolbars contain buttons allowing you a fast access to a large number of
commands and functions of **WAGO-I/O-*CHECK***. When pointing with the
mouse on the button the corresponding name appears. The toolbars are fixed
to their position and cannot be switched off.

WAGO-I/O-*CHECK* contains the following toolbars:

Standard

Commands to open, save and print node descriptions.

Node

Commands to set the operation mode of **WAGO-I/O-
CHECK**.

Module

Commands to adjust modules and display process data.

Zoom

Commands to display the node.

4.3.1   Standard Toolbar

The **Standard** toolbar contains the following buttons:
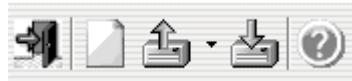
Button	Action
	Exit Terminates **WAGO-I/O-*CHECK***.
	New Initializes a new node.
	Open Opens an existing node description. Use the Open File dialog box to select a file name. The corresponding pulldown menu shows the four last processed node descriptions.
	Save Saves the active node description. If you save a node the first time the Save As dialog box will prompt you for a filename.
	Help Opens the online-help for **WAGO-I/O-*CHECK***.

4.3.2 Node Toolbar

The **Node** toolbar contains the following buttons:

Button	Action
	Read Configuration Determines the configuration of the connected node.
	Control-Mode Toggles the selected control-mode ON or OFF. Select the desired control-mode from the corresponding pulldown menu.
	Monitor-Mode Toggles the monitor-mode ON or OFF.

4.3.3 Module Toolbar

The **Module** toolbar contains the following buttons:

Button	Action
	Rename Renames a digital I/O module. This command is only available if a digital I/O module is selected.
	Module settings Changes the parameters of the selected module. This command is only available if the parameters of the selected module are changeable.
	Process data Shows the process data of the selected module. This command is only available if a node configuration has been read or a node description has been opened.

4.3.4 Zoom Toolbar

The **Zoom** toolbar contains the following buttons:

Button	Action
	Zoom down Reduces the node display.
	Zoom up Enlarges the node display.
	Default size Sets the node display back to default size.

4.4 Navigationbar

The navigationbar displays the node in a tree structure with the coupler or controller, the connected I/O modules and the corresponding channels.
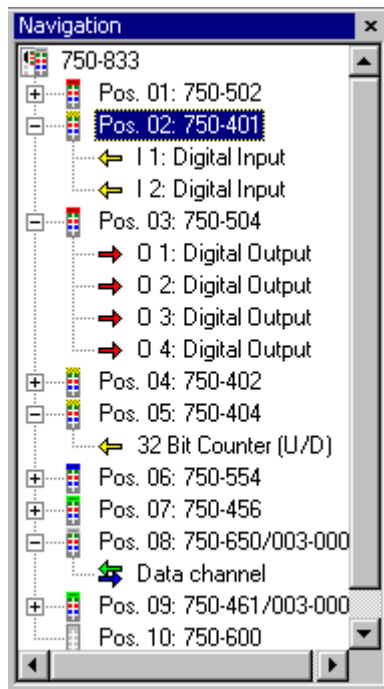
Single branches of this structure can be displayed by clicking the symbol ⊞ with the left mouse key. Click the symbol ⊟ with the left mouse key to hide a branch.
The visible detail can be moved with the scroll bars.

Use the command Navigationbar from the menu View to toggle the navigationbar ON or OFF.

A click with the right mouse key in the navigationbar opens the following context menu:
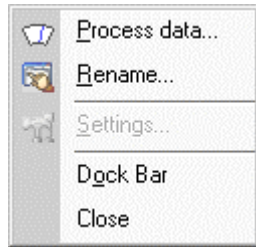
The context menu corresponds to the menu Module with the following additional commands:

Dock Bar   This command toggles the docked view of the navigation
             ON or OFF.
             If docked the navigationbar is displayed at the left sideof the
             node display. Otherwise the navigationbar overlaps the node
             display.
             Once the docked view is toggled on this menu entry is
             hooked.

Close   This command closes the navigationbar. Use the menu
             command *View\Navigationbar* to open the navigationbar
             again.

If a digital input or output module has been selected, the command Rename opens a dialog to change the module description.

If an input or output channel or a data channel has been selected, the command Rename opens a dialog to change the channel description.

4.5 Node Display

The node display shows an image of the connected or loaded node. The LED display of the shown modules corresponds to the LED status of the connected node.
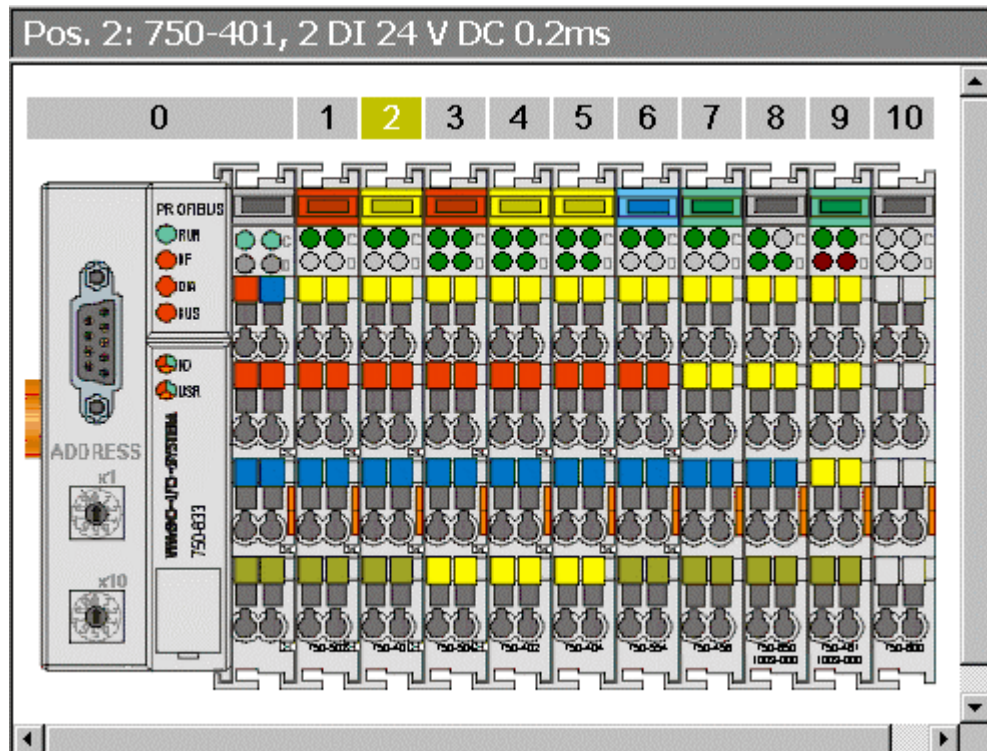
The displayed node can be resized either with the commands from the menu View\Zoom or the toolbar Zoom or with the shortkeys **<+>**, **<–>** or **<Strg>** + **<D>**.
The visible detail can be moved with the scroll bars.

A click with the right mouse key on a module opens the menu Module as a context menu to this module.
A click with the right mouse key outside the node opens the menu Node as a context menu.

4.6 Output Area

The output area displays the executed actions and occurred errors in chronological order.

```
× 2004-06-16, 14:26:52 - Read node configuration...
  2004-06-16, 14:26:57 -   Pos. 00: 0750-0833
  2004-06-16, 14:26:57 -   Pos. 01: 0750-0560
  2004-06-16, 14:26:57 -   Pos. 02: 0750-0456
  2004-06-16, 14:26:58 -   Pos. 03: 0750-0461/0003-0000
  2004-06-16, 14:26:58 -   Pos. 04: 0750-0600
```
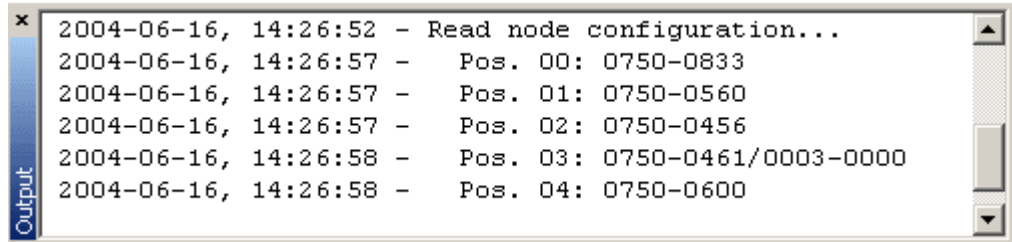
The output lines are built up as follows:

Date ,   Time - Description of actions or errors.

The visible detail can be moved with the scroll bars.

Use the command Output Area from the menu View to toggle the output area ON or OFF.

A click with the right mouse key in the output area opens the following context menu:

```
Copy
Delete
Dock Bar
Close
```

The context menu containes following commands:

Copy   This command copies the entries from the output area to the
                clipboard.

Delete   This command deletes the entries in the output area.

Dock Bar   This command toggles the docked view of the output area
                ON or OFF.
                If docked, the output area is displayed below the node
                display. Otherwise the output area overlaps the node display.
                Once the docked view is toggled ON, this menu entry is
                hooked.

Close   This command closes the output area. Use the menu
                command *View\Output* to open the output area again.

4.7 Statusbar

The statusbar is placed at the bottom of the **WAGO-I/O-*CHECK*** window. It displays informations on commands, connection parameters and status and the operation mode.

Use the command Statusbar from the menu View to toggle the statusbar ON or OFF.

As you move through the menu with the arrow keys the left area of the status bar describes the the function of the menu entries. In the same manner this area also describes the effect of the toolbar buttons if these are clicked and held down. Release the mouse button when the cursor is no longer on the toolbar button if you do not want to execute the command associated by the toolbar button. A progress bar and a describing text appears to display the progress of various actions.

For Help, press F1

In the middle area of the statusbar the parameters of the serial interface and the operation mode of **WAGO-I/O-*CHECK*** are displayed:

COM1: 19200, E, 8, 1   MONITOR ---------------------

The right area of the statusbar shows the status of the connection to the coupler:

Offline ⊘⊘⊘

Display	Description
Offline	The connection to the coupler is not active.
Online	**WAGO-I/O-*CHECK*** is polling the process data out of the connected node.

⚠ *Warning!*
Do not cut the connection in this case!

LED	Description
⊘⊘⊘	If all LED´s are switched off (gray), the node configuration has not been read and data is not beein exchanged between **WAGO-I/O-*CHECK*** and the coupler.
🟢⊘⊘	The green LED (left side) is lit if the node configuration was successfully read.

The yellow LED (in the middle) is lit if **WAGO-I/O-CHECK** is polling the process data out of the connected node.

Warning!
Do not cut the connection while data is beein exchanged!

The red LED (right side) is lit either if the node was not successfully read or any other errors ocurred.

4.8 Dialog Boxes

Dialog boxes always will be displayed, if the application expects input from the user.

Usually the application will apply the new data if you click the **OK** button or if you press the **<Enter>** key on the keyboard. Dialog boxes will alway be colsed without any changes if you click the **Cancel** button or if you press the **<Esc>** key on the keyboard.

WAGO-I/O-*CHECK* provides the following **dialog boxes**:

General Dialog Boxes,

Process Data Dialog Boxes,

Parameter Dialog Boxes.

4.8.1 General Dialog Boxes (Overview)

Serial Interface Settings,

Select Digital I/O Modules,

Insert Supply or Separation Module,

Fieldbus Coupler Services.

4.8.1.1 Serial Interface Settings (Dialog Box)
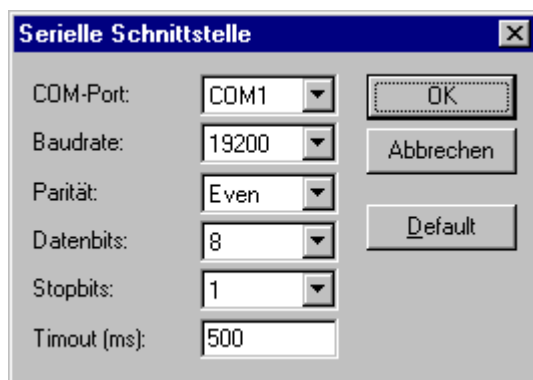
Select the serial PC interface for communication with the coupler. All other settings (baud rate, data bits,...) are fixed to default values for communication with the **WAGO-I/O-SYSTEM 750** and not changeable. The dropdown list shows all available COM-ports, which are not occupied by other applications.

Select the serial interface connected with the communication cable from the dropdown list (e.g. COM1).

4.8.1.2 Select Digital I/O Modules (Dialog Box)

A coupler only stores information about the direction (input/output) and the number of inputs/outputs for digital I/O modules. For this reason **WAGO-I/O-CHECK** offers the possibility to enter more detailed information for detected digital I/O modules with this dialog box. The selection list contains only I/O modules which are suitable for the displayed position.
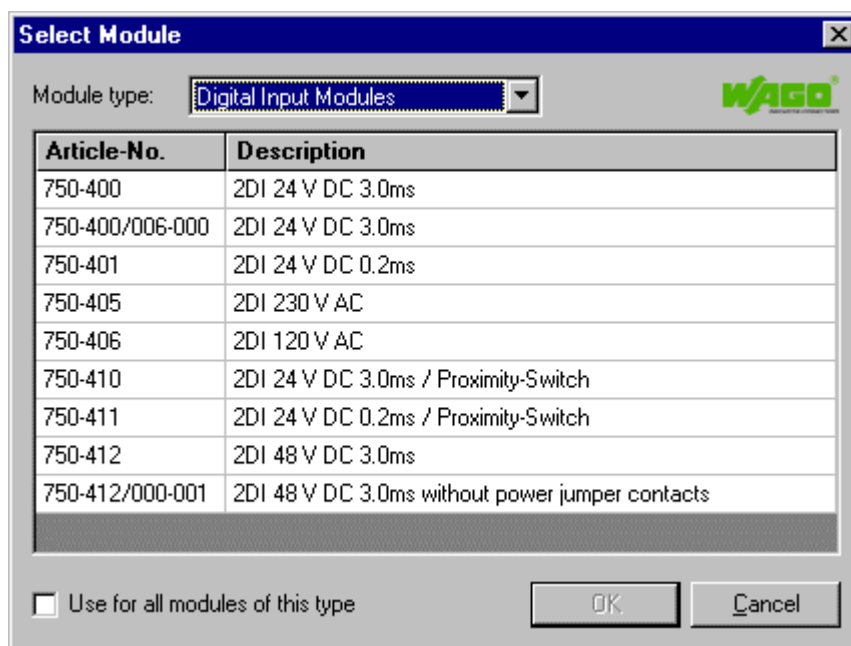
4.8.1.3 Insert Supply or Separation Module (Dialog Box)

Note:
This function is not yet available!

4.8.1.4 Fieldbus Coupler Services (Dialog Box)

Note:
This function is not yet available!

4.8.2 Process Data Dialog Boxes (Overview)

The following dialog boxes provide the visualisation of process data of I/O modules:

Digital I/O Modules

2 Channel Digital Input,

2 Channel Digital Input with Diagnosis,

4 Channel Digital Input,

8 Channel Digital Input,

2 Channel Digital Output,

2 Channel Digital Output with Diagnosis,

4 Channel Digital Output,

8 Channel Digital Output,

Analog I/O Modules

2 Channel Analog Input,

4 Channel Analog Input,

2 Channel Analog Output,

4 Channel Analog Output,

Special Modules

Counter Modules (1x32 Bit),

Counter Modules (2x16 Bit),

Serial Interface Modules,

AS-interface Master Module.

4.8.2.1 Context Menues of the Process Data Dialog Boxes of the Digital I/O Modules

A click with the right mouse key on the channel description of the digital I/O modules opens the following context menu:
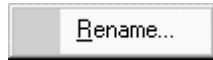
Rename ...   Use this command to open a dialog box for the input of a new channel description.
Press the **OK** button to save the new description and close the dialog box,
press the **CANCEL** button to close the dialog box without saving.

4.8.2.2 2 Channel Digital Input (Process Data Dialog Box)
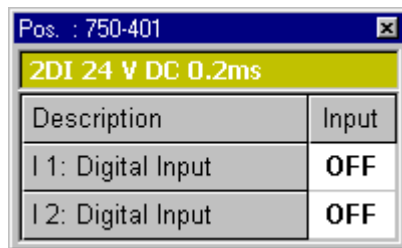
Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the input column indicate the state (ON / OFF) of the digital inputs 1 and 2. If an input is active, the text ´ON´ is displayed on green background.

→ **Note:**
The state of digital inputs is indicated in the node display by colored LED´s.

A click with the right mouse key on the text box of the description column opens a context menu to rename the channel description.

4.8.2.3 2 Channel Digital Input with Diagnosis (Process Data Dialog Box)
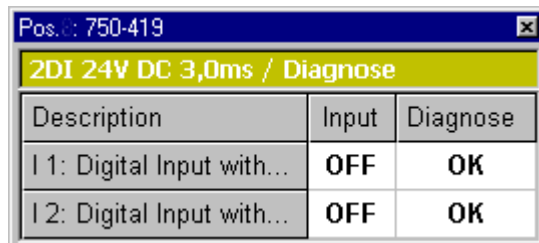
Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the input column indicate the state (ON / OFF) of the digital inputs 1 and 2. If an input is active, the text ´ON´ is displayed on green background.

The text boxes of the diagnosis column indicate the state (ERR / OK) of the respective diagosis. If an error occurs, the text ´ERR´ is displayed on red background.

Note:
The state of digital inputs is indicated in the node display by colored LED´s.

A click with the right mouse key on the text box of the description column opens a context menu to rename the channel description.

4.8.2.4   4 Channel Digital Input (Process Data Dialog Box)

Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the input column indicate the state (ON / OFF) of the digital inputs 1 to 4. If an input is active, the text ´ON´ is displayed on green background.

Note:
The state of digital inputs is indicated in the node display by colored LED´s.

A click with the right mouse key on the text box of the description column opens a context menu to rename the channel description.

4.8.2.5   8 Channel Digital Input (Process Data Dialog Box)

Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the input column indicate the state (ON / OFF) of the digital inputs 1 to 8. If an input is active, the text ´ON´ is displayed on green background.

→ | **Note:**
The state of digital inputs is indicated in the node display by colored LED´s.

A click with the right mouse key on the text box of the description column opens a context menu to rename the channel description.

4.8.2.6   Notes on Setting and Resetting of Digital Outputs

Depending on the selected Control-Mode, operator actions affect the output process image of the node in different ways:

In the Control-Mode Direct, a digital output is directly set by a mouseclick or pressing the **<Space>** key. The next mouseclick or **<Space>** key pressing resets the output.

In the Control-Mode Collect, settings of digital outputs are collected and sent to the node as the button **SEND DATA** is pressed.

In the Control-Mode Force, a digital output is active only as long as the left mousekey or the **<Space>** key is pressed.

In the Control-Mode Permanent, settings of digital outputs will remain after the termination of the connection to the node until a node reset.

4.8.2.7　　2 Channel Digital Output (Process Data Dialog Box)

Pos. : 750-502	☒
2DO 24V DC 2.0A	
Description	Output
A 1: Digital Output	**OFF**
A 2: Digital Output	**OFF**

Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the output column indicate the state (ON / OFF) of the digital outputs 1 and 2. If an output is active, the text ´ON´ is displayed on green background.

Use one of the following options to change the state of a digital output: Click to the corresponding text box or use the **<Tab>** key to select a check box and hit the **<Space>** key to toggle the output state.

Warning!
Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches) has no effect !

Note:
Please refer to the chapter Notes on Setting and Resetting of Digital I/O Modules concerning the reaction of digital outputs in the different operation modes.

Note:
The state of digital outputs is indicated in the node display by colored LED´s. To toggle the state it is also possible to click the LED´s.

A click with the right mouse key on the text box of the description column opens a context menu to rename the channel description.

4.8.2.8　　2 Channel Digital Output with Diagnosis (Process Data Dialog Box)

Pos. : 750-506		☒
2DO 24V DC 0.5A (Diagn)		
Description	Output	Diagnose
O 1: Digital Ouput with diagnostics	OFF	OK
O 2: Digital Ouput with diagnostics	OFF	OK

Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the output column indicate the state (ON / OFF) of the digital outputs 1 and 2. If an output is active, the text ´ON´ is displayed on green background.

The text boxes of the diagnosis column indicate the state (ERR / OK) of the respective diagosis. If an error occurs, the text ´ERR´ is displayed on red background.

Use one of the following options to change the state of a digital output: Click to the corresponding text box or use the **<Tab>** key to select a check box and hit the **<Space>** key to toggle the output state.

Warning!
Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches) has no effect !

Note:
Please refer to the chapter Notes on Setting and Resetting of Digital I/O Modules concerning the reaction of digital outputs in the different operation modes.

Note:
The state of digital outputs is indicated in the node display by colored LED´s. To toggle the state it is also possible to click the LED´s.

A click with the right mouse key on the text box of the description column opens a context menu to rename the channel description.

4.8.2.9   4 Channel Digital Output (Process Data Dialog Box)

Pos. : 750-504	☒
4DO 24V DC 0.5A	
Description	Output
A 1: Digital Output	OFF
A 2: Digital Output	OFF
A 3: Digital Output	OFF
A 4: Digital Output	OFF

Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the output column indicate the state (ON / OFF) of the digital outputs 1 to 4. If an output is active, the text ´ON´ is displayed on green background.
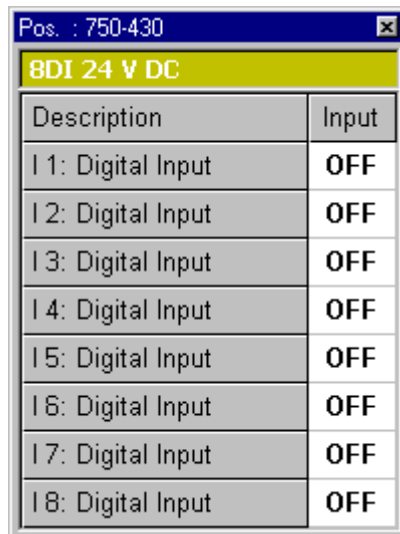
Use one of the following options to change the state of a digital output: Click to the corresponding text box or use the **<Tab>** key to select a check box and hit the **<Space>** key to toggle the output state.

> *Warning!*
> *Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches) has no effect !*

> **Note:**
> Please refer to the chapter Notes on Setting and Resetting of Digital I/O Modules concerning the reaction of digital outputs in the different operation modes.

> **Note:**
> The state of digital outputs is indicated in the node display by colored LED´s. To toggle the state it is also possible to click the LED´s.

A click with the right mouse key on the text box of the description column opens a context menu to rename the channel description.

4.8.2.10   8 Channel Digital Output (Process Data Dialog Box)

Pos. : 750-530	☒
8DO 24V DC	
Description	Output
A 1: Digital Output	OFF
A 2: Digital Output	OFF
A 3: Digital Output	OFF
A 4: Digital Output	OFF
A 5: Digital Output	OFF
A 6: Digital Output	OFF
A 7: Digital Output	OFF
A 8: Digital Output	OFF

Order number and position of the selected I/O module are shown at the titlebar.

The text boxes of the output column indicate the state (ON / OFF) of the digital outputs 1 to 8. If an output is active, the text ´ON´ is displayed on green background.

Use one of the following options to change the state of a digital output: Click to the corresponding text box or use the **<Tab>** key to select a check box and hit the **<Space>** key to toggle the output state.

> *Warning!*
> *Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor*
> *contactors, or valves) will remain until they are manually reset. In this*
> *case, switching the outputs off via control software (e.g. by limit switches)*
> *has no effect !*

> **Note:**
> Please refer to the chapter Notes on Setting and Resetting of Digital I/O
> Modules concerning the reaction of digital outputs in the different
> operation modes.

> **Note:**
> The state of digital outputs is indicated in the node display by colored
> LED´s. To toggle the state it is also possible to click the LED´s.

A click with the right mouse key on the text box of the description column
opens a context menu to rename the channel description.

4.8.2.11 Context Menues of the Process Data Dialog Boxes of the Analog Input Modules

A click with the right mouse key on the column header of the measuring
values opens the following context menu:
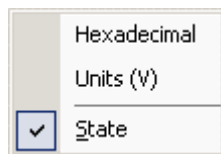
Hexadecimal   This command switches the display format of the measuring
                value to a hexadecimal value.

Units (V, mA, °C)   This command switches the display format of the
                measuring value to physical units.

State   This command toggles an additional column with state
                values ON or OFF.

The setting has effect on all measuring values of the analog input module. A
click with the right mouse key on the measuring value itself opens the context
menu to change the display format only for the selected measuring value. The
menu item of the selected format is hooked.

A click with the right mouse key on the column header of the state values
opens the following context menu:

Hexadecimal	This command switches the display format of the state value to a hexadecimal value.
Decimal	This command switches the display format of the state value to a decimal value.
Binary	This command switches the display format of the state value to a binary value.
Text	This command switches the display format of the state value to a text string.

The setting has effect on all state values of the analog input module. A click with the right mouse key on the state value itself opens the context menu to change the display format only for the selected state value. The menu item of the selected format is hooked.

A click with the right mouse key on the channel description of the analog input modules opens the following context menu:
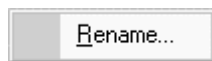
Rename ...	Use this command to open a dialog box for the input of a new channel description. Press the **OK** button to save the new description and close the dialog box, press the **CANCEL** button to close the dialog box without saving.

4.8.2.12   2 Channel Analog Input (Process Data Dialog Box)

Order number and position of the selected I/O module are shown at the titlebar.

The text boxes in the **Input** column display the anaolog input values of
channels 1 and 2 in the selected display format (physical units or hexadecimal
value).

A click with the right mouse key on the column header of the measuring
values or a measuring value itself opens a context menu to select the display
format of the measuring value and to switch an additional **State** column ON or
OFF.

The text boxes in the **State** column display the state values of channels 1 and 2
in the selected display format (hexadecimal, decimal, binary or text).

A click with the right mouse key on the column header of the state values or a
state value itself opens a context menu to select the display format of the state
value.

A click with the right mouse key on the channel description opens a context
menu to rename the channel description.

4.8.2.13   4 Channel Analog Input (Process Data Dialog Box)

Order number and position of the selected I/O module are shown at the
titlebar.

The text boxes in the **Input** column display the analog input values of
channels 1 to 4 in the selected display format (physical units or hexadecimal
value).

A click with the right mouse key on the column header of the measuring
values or a measuring value itself opens a context menu to select the display
format of the measuring value and to switch an additional **State** column ON or
OFF.

The text boxes in the **State** column display the state values of channels 1 to 4
in the selected display format (hexadecimal, decimal, binary or text).

A click with the right mouse key on the column header of the state values or a
state value itself opens a context menu to select the display format of the state
value.

A click with the right mouse key on the channel description opens a context menu to rename the channel description.

4.8.2.14 Context Menues of the Process Data Dialog Boxes of the Analog Output Modules

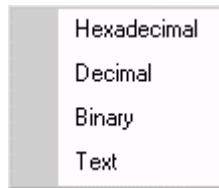A click with the right mouse key on the measuring value or the slider opens the following context menu:
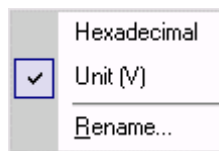
Hexadecimal   This command switches the display format of the measuring value to a hexadecimal value.

Units (V, mA, °C)   This command switches the display format of the measuring value to physical units.

Rename ...   Use this command to open a dialog box for the input of a new channel description.
Press the **OK** button to save the new description and close the dialog box,
press the **CANCEL** button to close the dialog box without saving.

4.8.2.15 Notes on Setting of Analog Outputs

Depending on the selected Control-Mode, operator actions affect the output process image of the node in different ways:

In the Control-Mode Direct, an analog output is set by moving the slider or entering a value into the edit box and pressing the **<Enter>** key subsequently.

In the Control-Mode Collect, settings of analog outputs are collected and sent to the node as the button **SEND DATA** is pressed.

In the Control-Mode Force, an analog output reacts as in the Control-Mode Direct.

In the Control-Mode Permanent, settings of analog outputs will remain after the termination of the connection to the node until a node reset.

4.8.2.16 2 Channel Analog Output (Process Data Dialog Box)
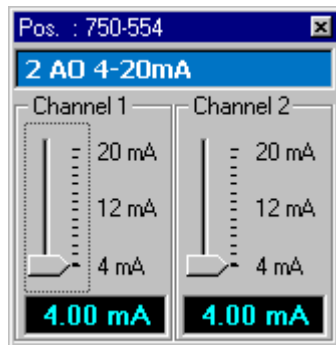
Order number and position of the selected I/O module are shown at the titlebar.

The slider positions and the values of the edit boxes correspond to the analog output values of channels 1 and 2.

Enter the desired value in the edit box and subsequently press the **<Enter>** key to set an analog output or move the slider with the mouse or the cursor keys to the desired position. Select a slider or edit box with a mouse click or with the **<Tab>** key.

Warning!
Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches) has no effect !

Note:
Please refer to the chapter Notes on Setting of Analog Output Modules concerning the reaction of analog outputs in the different operation modes.

Note:
If the entered value is out of range for the selected I/O module a fault message will be displayed and the the previous valid value will be retained.

A click with the right mouse key on the slider or the text box of the measuring value opens a context menu to select the display format of the measuring value and rename the channel description.

4.8.2.17   4 Channel Analog Output (Process Data Dialog Box)
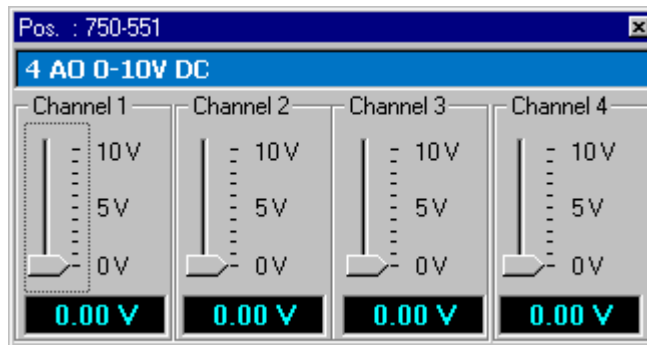
Order number and position of the selected I/O module are shown at the titlebar.

The slider positions and the values of the edit boxes correspond to the analog output values of the channels 1 to 4.

Enter the desired value in the edit box and subsequently press the **<Enter>** key to set an analog output or move the slider with the mouse or the cursor keys to the desired position. Select a slider or edit box with a mouse click or with the **<Tab>** key.

Warning!
Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches) has no effect !

Note:
Please refer to the chapter Notes on Setting of Analog Output Modules concerning the reaction of analog outputs in the different operation modes.

Note:
If the entered value is out of range for the selected I/O module a fault message will be displayed and the the previous valid value will be retained.

A click with the right mouse key on the slider or the text box of the measuring value opens a context menu to select the display format of the measuring value and rename the channel description.

4.8.2.18 Counter Module (1x32 Bit) (Process Data Dialog Box)
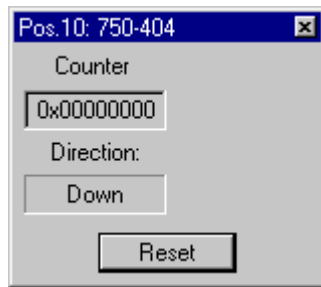
Order number and position of the selected I/O module are shown at the titlebar.

The edit boxes show the current counter position as a hexadecimal value and the count direction or gated state of the counter.

Use the **RESET** button to reset the counter to zero.

4.8.2.19 Counter Module (2x16 Bit) (Process Data Dialog Box)
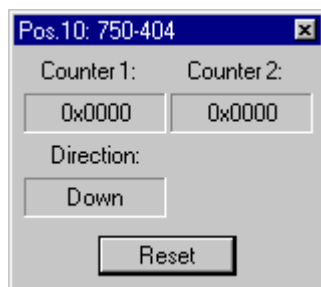
Order number and position of the selected I/O module are shown at the titlebar.

The edit boxes show the current counter positions as hexadecimal values and the count direction of the counters.

Use the **RESET** button to reset both counters to zero.

4.8.2.20   Serial Interface Module (Process Data Dialog Box)

Byte	Output	Input
CT/ST	0x00	0x00
D0	0x00	0x00
D1	0x00	0x00
D2	0x00	0x00

Pos. : 750-650/003-000 — RS 232 C Interface (Adjustable)

Order number and position of the selected I/O module are shown at the titlebar.

The data values of the serial inteface module are shown in the output boxes as hexadecimal values.

4.8.2.21   AS-interface Master (Processdata Dialog Box in Monitor-Mode)

Following process data dialog box is shown for the AS-interface master in monitor-mode:

Pos. : 750-655 — AS-Interface Master (Input)

Byte	7	6	5	4	3	2	1	0
+0	00	00	00	00	00	00	00	17
+8	CC	CC	CC	CC	CC	CC	CC	80
+16	00	00	00	0C	00	C0	CC	CC

Order number and position of the selected I/O module are shown at the titlebar.

A click with the right mouse key on the table header opens a context menu to change the display of process values or to reset reset the process values.
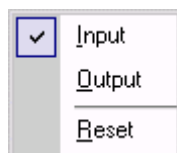
✓	Input
	Output
	Reset

Input   displays input values of the process image of the AS-interface master,

Output   displays output values of the process image of the AS-interface master,

Reset   proceeds a reset of the process image of the AS-interface master.

Following process data dialog box is shown after changing to output display:

Use the context menu to change back to input display.

The display of process values in monitor-mode is only used for information. If you want to change process or configuration values of the AS-interface master, open the process data dialog box in control-mode.

4.8.2.22 AS-interface Master (Prozess Data Dialog Box in Control-Mode)

Following process data dialog box is shown for the AS-interface master in control-mode:
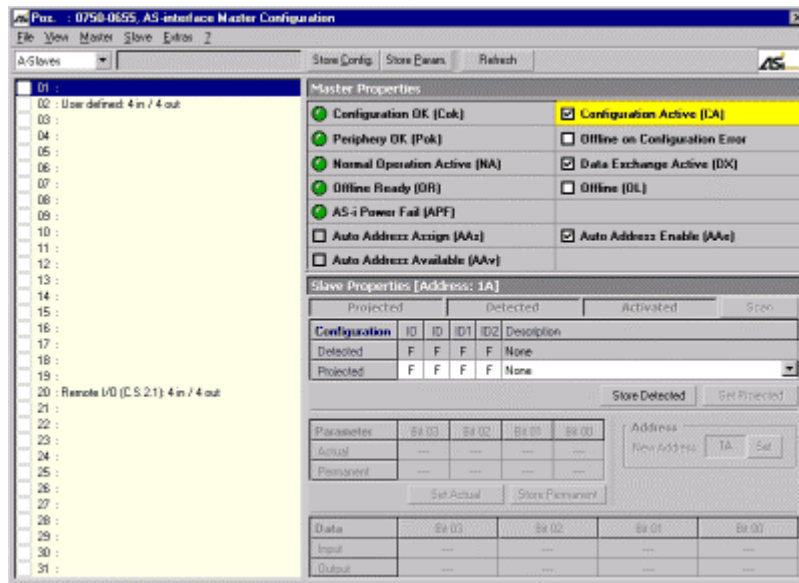
Order number and position of the selected I/O module are shown at the titlebar.

The process data dialog box of the AS-interface master is used in control-mode as configuration dialog box, too.

The process data dialog box is divided into the following parts:

Menubar of the AS-interface Process Data Dialog Box,

Toolbar of the AS-interface Process Data Dialog Box,

Properties of the AS-interface Master,

AS-interface Slave Overview,

Properties of the selected AS-interface Slave.

4.8.2.22.1 Toolbar of the AS-interface Process Data Dialog Box

| Store Config. | Store Param. | Refresh |
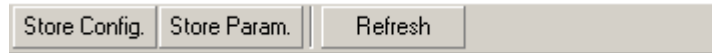
Press the **STORE CONFIG.** button to set the actual configuation of all slaves as projected configuration.

Press the **STORE PARAM.** button to save the actually changed parameters of all slaves as permanent parameters.

Press the **REFRESH** button to scan all slaves. The actually scanned slave is shown in the headline of the slave list. When all slaves are scanned, the display of the slave list is refreshed.

4.8.2.22.2 Properties of the AS-interface Master

Master Properties

🔴 Configuration OK (Cok)	☑ Configuration Active (CA)
🟢 Periphery OK (Pok)	☐ Offline on Configuration Error
🟢 Normal Operation Active (NA)	☑ Data Exchange Active (DX)
🟢 Offline Ready (OR)	☐ Offline (OL)
🟢 AS-i Power Fail (APF)	
☐ Auto Address Assign (AAs)	☑ Auto Address Enable (AAe)
☐ Auto Address Available (AAv)	⚠ Slave at Address 00 (S0)

The status flags are used for the information of the user:

Flag	Status	Symbol	Text	Description
Cok	OFF	green	Configuration OK	This flag is set, if the projected configuration and the read out configuration of the master are the same.
	ON	red		
Pok	OFF	green	Periphery OK	This flag is set, if no AS-interface slave has a periphery error.
	ON	red		
NA	OFF	green	Normal Operation Active	This flag is set, if the AS-interface master is in normal operation.
	ON	red		
OR	OFF	green	Offline Ready	This flag is set, if the AS-interface master is in offline phase.
	ON	yellow		
APF	OFF	green	AS-I Power Fail	This flag is set, if the voltage of the AS-interface circuit is too low.
	ON	red		

Flag	Status	Symbol	Text	Description
AAs	OFF	none	Auto Address Assign	This flag is set, if automatic addressing is possible (i.e. the AUTO_ADDRESS_ ENABLE flag is set and no wrong Slave is attached at the AS interface).
	ON	Hook		
AAv	OFF	none	Auto Address Available	This flag is set, if automatic addressing is available (i.e. exactly one slave failed at present)
	ON	Hook		
S0	OFF	none	(no display)	This flag is set, if an AS-interface slave with the address 00 is found.
	ON	Warning	Slave at Address 00	

Use the control flags th select the operation mode of the AS-interface master:

Flag	Status	Symbol	Text	Description
CA	OFF	none	Configuration Active	If this flag is set, the Projecting-Mode is switched on.
	ON	Hook		
--	OFF	none	Offline on Configuration Error	If this flag is clicked, a dialog box with a list of all connected slaves will be opened. From this list you may select slaves which set the master offline if an error occurs. The flag is set, if at least one slave is selected.
	ON	Hook		
DX	OFF	none	Data Exchange Active	If this flag is set, data exchange between master and slaves is enabled. If the the data exchange is disabled, Read-ID telegrams are sent instead of data telegrams.
	ON	Hook		
OL	OFF	none	Offline	If this flag is set, the master changes to the Offline-State.
	ON	Hook		
AAe	OFF	none	Auto Address Enable	If this flag is set, automatic addressing is enable by the user.
	ON	Hook		

4.8.2.22.3 Modul Information of the AS-interface Master

Pos. 1: Module Information	
AS-Interface Master	
WAGO Identification	
Description	AS-Interface Master
Article Number	750-655
HW Version	01
SW Version	XX
SW Compile Date	
AS-i Identification	
AS-i Name	Wago750-655
AS-i Datecode	20030827655
AS-i SW-Options	.B..Dc1.DoA.At.t
Data Frame Settings	
Process Image Size	48 Bytes
AS-i Data Length	28 Bytes
Mailbox Length	18 Bytes
Mailbox Overlapped	NO

This dialog box shows module-specific informations, software identification of the AS-interface master, the process image size, the size of AS-interface process data and mailbox and the mailbox mode.

4.8.2.22.4 AS-interface Slaves

A-Slaves ▼	
P 01 : <Slave missing>	
02 : Remote I/O: 2 in / 2 out	
03 : Remote I/O: 2 in / 2 out	
04 : Remote I/O: 2 in / 2 out	
05 : Remote I/O: 2 in / 2 out	
C 06 : Remote I/O: 2 in / 2 out	
07 : Remote I/O: 2 in / 2 out	
08 : Remote I/O: 2 in / 2 out	
09 : Remote I/O: 2 in / 2 out	
10 : Remote I/O: 2 in / 2 out	
11 :	
D 12 : Remote I/O: 2 in / 2 out	
13 :	
14 :	

The slave list in the left part of the dialog box containes the slave addresses with status, address number and description.

The AS-interface slaves are scanned automatically when the control-mode is switched on or when the operation mode of the AS-interface master is changed.
Press the **REFRESH** button in the toolbar area to scan all slaves manually.
The actually scanned slave is displayed in the status field in the headline of the

slave list. After all slaves have been scanned, the display of the list is refreshed.

Use the selection field in the headline of the slave list to toggle between A-, B- or Safety at Work-slaves.

For A- and B-slaves following messages are indicated in case of configuration errors:

C	Type Conflict	The profile of the read out AS-interface slave does not fit to the profile of the projected AS-interface slave.
D	Slave Detected	For this address no AS-interface slave is projected, nevertheless the indicated AS interface slave was recognized at the AS-interface circuit.
P	Slave Projected	For this address no AS-interface slave was detected, however an AS-interface slave with the indicated data was projected.

Click on the slave description to select the slave and display the Slave properties.

The slave description is displayed in light gray, if the process data cannot be displayed in the process image.

The slave description of Safety at Work slaves is displayed on a yellow background.
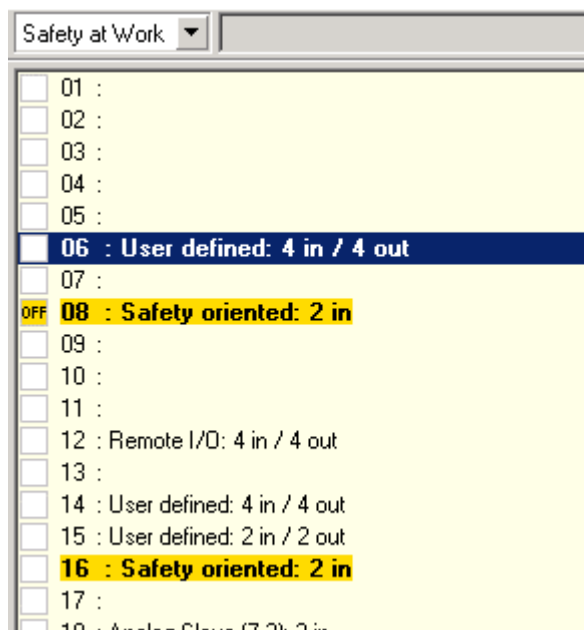
For Safety at Work Slaves following messages are indicated in case of an error:

OFF	Slave has OFF-status	The Safety at Work Monitor does not receive any valid feedback from the slave.

If the selected slave is a Safety at Work Monitor, the Safety at Work Monitor is displayed instead of the slave properties.

4.8.2.22.4.1   Properties of the selected AS-interface Slave

The headline of the property area shows the address of the selected slave.

The property area is divided into four parts:

AS-interface slave configuration

AS-interface slave parameter

AS-interface slave address

AS-interface slave data

4.8.2.22.4.1.1   AS-interface Slave Configuration

The headline shows the address of the selected slave and the second line shows the status of the selected slave:

Projected	A slave has been projected at the selected address.
Detected	A slave has been detected at the selected address.
Activated	Projected and detected configuration of the slave at the selected address are the same and the slave has ben activated.

Press the SCAN button to scan the selected slave manually.

The table shows the configuration of the selected slave with configuration ID and slave description.
The **Detected** line indicates the status which has been read out from the slave by the master.
The **Projected** line indicates the status which has been projected. Use the selection field in the **Description** column to change the slave type.

Press the STORE DETECTED button to set the actual configuration from the **Detected** line as projected configuration. This button is only available in configuration mode.

Press the SET PPROJECTED button to store the adjusted configuration of the **Projected** line in the AS-interface master. This button is only available in configuration mode.

Press the STORE CONFIG. button from the toolbar of the AS-interface process data dialog box to set the actual configuration of all slaves as projected configuration. This button is only available in configuration mode.

4.8.2.22.4.1.2   AS-interface Slave Parameter

Parameter	Bit 03	Bit 02	Bit 01	Bit 00
Actual	ON	ON	ON	ON
Permanent	ON	ON	ON	ON
	Set Actual		Store Permanent	

The table shows the parameters of the selected slave.
The **Actual** line indicates the status which has been read out from the slave by the master.
The **Permanent** line indicates the projected status of the parameters.

Please refer to the AS-interface specification or the manual of the connected slave for the meanig of the parameters.

In order to set or reset a parameter, click either with the mouse into the appropriate indication field or select the indication field with the **<Tab>** key and press the **<Space>** key.

Press the SET ACTUAL button to send the adusted parameters to the slave. These parameters are volatile and are lost with a voltage failure.

Press the **STORE PERMANENT** button to store the adjusted parameters non-volatile in the master.
These parameters will be transferred to the slave when the master is switched on.

Press the **STORE PARAM.** button to save the actually changed parameters of all slaves as permanent parameters.

4.8.2.22.4.1.3 AS-interface Slave Address

Address		
New Address:	1A	Set

Enter the desired address for the selected slave in the entry field **New Address**.

Press the **SET** button to store the desired address.

→ **Note:**
Please note: The structure of the process image may change due to address variations. As a result, the configuration of the higher-level controller should be modified if necessary.

4.8.2.22.4.1.4 AS-interface Slave Data

Data	Bit 03	Bit 02	Bit 01	Bit 00
Input	OFF	OFF	OFF	OFF
Output	OFF	OFF	OFF	OFF

7.3 Data	Channel 1	Channel 2	Channel 3	Channel 4
Input	0x0091	0x7FFF	0x7FFF	0x7FFF
Output	0x0000	0x0000	0x0000	0x0000

The indication fields in the data area indicate the status (ON / OFF) of the digital input and output channels or the hexadecimal values of the analog input and output channels.

In order to set or reset a digital output, click either with the mouse into the appropriate indication field in the output line or select the indication field with the **<Tab>** key and press the **<Space>** key. In order to adjust an analog output, click either with the mouse into the appropriate entry field in the output line or select the entry field with the **<Tab>** key. Enter the desired value in the entry field and press the **<Enter>** key

⚠ *Warning!*
Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches)

has no effect !

Note:
Please refer to the chapters Notes on Setting and Resetting of Digital I/O
Modules and Notes on Setting of Analog Output Modules concerning the
reaction of outputs in the different operation modes.

4.8.2.22.4.2   Safety at Work Monitor

Safety at Work Monitor [Address: 6A]			
Projected	**Detected**	**Activated**	Scan

AS-i Safety Monitor		Enable Circuit 1		Enable Circuit 2	
		Index	**Color**	**Index**	**Color**
Mon. State	0x01	32	6	32	0
Ch. 1 State	0x02	33	4	33	0
Ch. 2 State	0x02	34	4	34	0
Ch. 1 Count	3	35	0	35	0
Ch. 2 Count	0	36	0	36	0
		37	0	37	0
Read Diagnosis		38	0	38	0
		39	0	39	0
		40	0	40	0
		41	0	41	0
		42	0	42	0

The headline shows the address of the selected slave and the second line
shows the status of the selected slave:

Projected	A slave has been projected at the selected address.
Detected	A slave has been detected at the selected address.
Activated	Projected and detected configuration of the slave at the selected address are the same and the slave has ben activated.

Press the **SCAN** button to scan the selected slave manually.

Please refer to the documentation of the Safety at Work Monitor or the
documentation of the selected slave for the meaning of the **AS-i Safety
Monitor** or **Enable Circuit 1/2** tables.

Press the **READ DIAGNOSIS** button to get the diagnosis informations of the
selected Safety at Work Monitor.
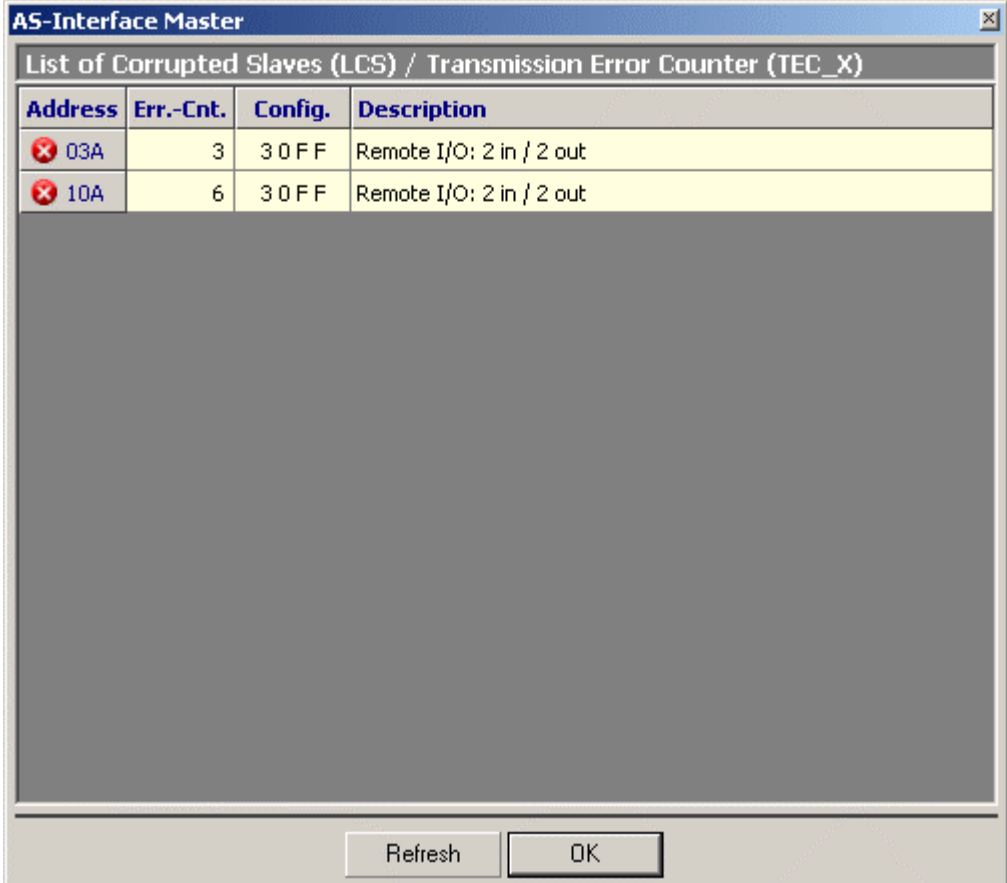
Note:
This function causes an error message if the selected slave is not a Safety at
Work Monitor.

To mark a slave as Safety at Work Monitor, select the command *Safety at Work Monitor* from the *Slave* menu.

4.8.2.22.4.3   List of Slaves with Configuration Errors (LCS)

This list shows all slaves with configuration errors. Each line contains the slave address, the number of occurred errors since the last reading of the list, the configuration ID of the slave and the slave description.

Occured errors and the number of errors are stored in the AS-interface master. So it is possible to record even errors that last only for a short time. After reading the list from the master all error buffers are reset to zero.

If no error occured since the last reading of the list, a message text is shown.

Press the **REFRESH** button to read out the list from the master again.

Press the **OK** button to close the LCS dialog box.

4.8.2.22.4.4 List of Offline-Slaves (LOS)
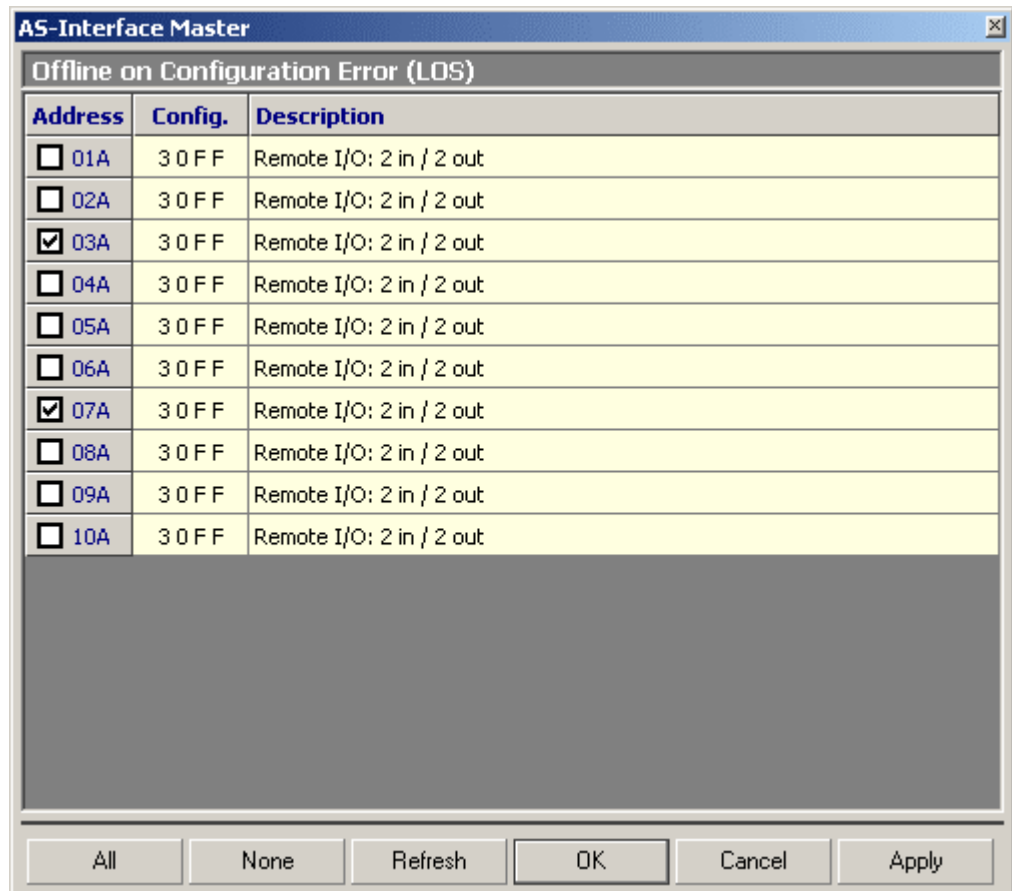
The list shows all slaves recognized by the master. The list entries contain the slave address, the configuration ID as well as the slave description.

The slaves, which shall switch the master into the offline-status in case of a configuration error, are marked in front of the slave address. The marking can be switched on or off by clicking the mark field with the mouse.

Press the **ALL** button to mark all slaves from the list to switch the master into offline-status in case of configuration errors.

Press the **NONE** button to unselect all slaves from the list.

Press the **REFRESH** button to read out the list from the master again.

Press the **OK** button to store the setting in the master and to close the LOS dialog box.

Press the **CANCEL** button to close the LOS dialog box.

Press the **APPLY** button to store the setting in the master.

4.8.3   Parameter Dialog Boxes (Overview)

Parameter dialog boxes are available for the following I/O modules:

Analog I/O Modules

2 Channel Input module for RTDs 750-461/003-000,

2 Channel Input Module for Thermocouples 750-469/003-000,

Special Modules

Serial Interface Module RS 232 C 750-650/003-000,

Serial Interface Module RS 485 750-653/003-000,

AS-interface Master Module 750-655.

4.8.3.1   2 Channel Input Module for RTDs 750-461/003-000 (Parameter Dialog Box)

Order number and position of the selected I/O module are shown at the titlebar.

Following select boxes are shown in the dialog box:

Select box	Available settings		
RTD Type	Pt100 (-200 °C – 850 °C)* / Ni100 (-60 °C – 250 °C) / Pt1000 (-200 °C – 850 °C) / Pt500 (-200 °C – 850 °C) / Pt200 (-200 °C – 850 °C) / Ni1000 (-80 °C – 320 °C) / Ni120 (-80 °C – 320 °C) / Ohm (10.0 Ω – 5000.0 Ω) / Ohm (10.0 Ω – 1200.0 Ω)		
Connection	2-wire	Two-wire connection	
	3-wire*	Three-wire connection	

Select box	Available settings	
State-Bits	OFF*	State bits are not mapped
	ON	State bits are mapped to the lower three bits of the output value:
		Bit 0:overrun. Bit is set if measuring value runs out of range.
		Bit 1:error. Bit is set if the modul detects an error in internal functions or a shortcut at the input.
		Bit 2: 0
Watchdog Timer	OFF	Watchdog timer not active
	ON*	Watchdog timer active. If no data are exchanged with the buscoupler for 100 ms, the green LEDs will turn off.
Amount Sign	OFF*	Two´s complement indication
	ON	Amount/Sign indication
Filter Constants	12.5 Hz – 500 ms / 25 Hz – 250 ms* / 50 Hz – 125 ms / 60 Hz – 110 ms / 100 Hz – 65 ms	
Overrange Protection	OFF	The output value is not limited
	ON*	If the temperature exceeds 850°C, the status bits are set and the output value is limited to 850°C
User Scaling	OFF*	User scaling not active
	ON	User scaling active
WAGO Scaling	OFF	WAGO scaling not active
	ON*	WAGO scaling active
	* default settings	

Select the input channel from the select box in the table headline.

Use the edit boxes **Offset** and **Gain** to change the offset and gain values of the user scaling or manufacturer scaling. The input is done in hexadecimal format. The appropriate scaling and the selection field must be activated in order to change the values.

Press the **CLOSE** button to quit the parameter dialog box without storing parameters in the EEPROM of the module.

Press the **APPLY** button to store the changed parameters in the EEPROM of the module. The dialog box will not be closed.

Press the **ALIGNMENT** button to open the alignment dialog box of the selected I/O module.

Press the **DEFAULT** button to show the default settings for this module. The setting are stored in the EEPROM of the module using the **APPLY** button.

Press the SAVE button to save the actual settings into a file. A dialog box will be opened to enter a filename and path.

Press the OPEN button to open a file with already saved settings. A dialog box will be opened to enter a filename and path.

4.8.3.2   2 Channel Input Module for RTDs 750-461/003-000 (Alignment Dialog Box)

Use the edit boxes **Offset** and **Gain** to change the offset and gain values for the hardware alignment. If required, you can adjust the offset for the wire resistance with the edit box **2-Wire Offset** when performing a 2-wire measurement. Inputs are done in hexadecimal format.

The output box shows the actual measurement value in hexadecimal format.

Press the **OK** button to store the changed values in the EEPROM of the module and to close the alignment dialog box.

Press the CANCEL button to quit the alignment dialog box without storing any values inthe EEPROM of the module.

Closing the alignment dialog box switches the operation focus back to the parameter dialog box.

4.8.3.3 2 Channel Input Module for Thermocouple 750-469/003-000 (Parameter Dialog Box)

Order number and position of the selected I/O module are shown at the titlebar.

Following select boxes are shown in the dialog box:

Select box	Available settings	
Sensor Type	L: -25 °C – 900 °C / K: -100 °C – 1370 °C* / J: -100 °C – 1200 °C / E: -100 °C – 1000 °C / T: -100 °C – 400 °C / N: -100 °C – 1300 °C / U: -25 °C – 600 °C / B: 600 °C –1800 °C / R: 0 °C – 1700 °C / S: 0 °C – 1700 °C / ± 30 mV / ± 60 mV / ± 120 mV	
Check Lower Range	OFF	State bit 0 is not set on measuring value underrange
	ON*	State bit 0 is set on measuring value underrange
State-Bits	OFF*	State bits are not mapped
	ON	State bits are mapped to the lower three bits of the output value: Bit 0:overun. Bit is set if measuring value runs out of range. Bit 1:error. Bit is set if the modul detects an error in internal functions or a wire break. Bit 2: 0
Watchdog Timer	OFF	Watchdog timer not active
	ON*	Watchdog timer active. If no data are exchanged with the buscoupler for 100 ms, the green LEDs will turn off.

Select box	Available settings	
Amount Sign	OFF*	Two´s complement indication
	ON	Amount/Sign indication
Filter Constants	25 Hz – 640 ms / 50 Hz – 320 ms* / 100 Hz – 160 ms / 200 Hz – 80 ms	
Cold Junction Compensation	OFF	Cold junction compensation not active
	ON*	Cold junction compensation active
Wire Break Detection	OFF	Wire break detection not active
	ON*	Wire break detection active
User Scaling	OFF*	User scaling not active
	ON	User scaling active
WAGO Scaling	OFF	WAGO scaling not active
	ON*	WAGO scaling active
	* default setting	

Select the input channel from the select box in the table headline.

Use the edit boxes **Offset** and **Gain** to change the offset and gain values of the user scaling or manufacturer scaling. The input is done in hexadecimal format. The appropriate scaling and the selection field must be activated in order to change the values.

Press the **CLOSE** button to quit the parameter dialog box without storing parameters in the EEPROM of the module.

Press the **APPLY** button to store the changed parameters in the EEPROM of the module. The dialog box will not be closed.

Press the **DEFAULT** button to show the default settings for this module. The settings are stored in the EEPROM of the module using the **APPLY** button.

Press the **SAVE** button to save the actual settings into a file. A dialog box will be opened to enter a filename and path.

Press the **OPEN** button to open a file with already saved settings. A dialog box will be opened to enter a filename and path.

4.8.3.4   Serial Interface Module RS 232 C 750-650/003-000 (Parameter Dialog Box)

Order number and position of the selected I/O module are shown at the titlebar.

Following select boxes are shown in the dialog box:

Select box	Available settings	
Baudrate	1200 Baud / 2400 Baud / 4800 Baud / 9600 Baud* / 19200 Baud	
Data frame	7 Databits, Even Parity / 7 Databits, Odd Parity / 8 Databits, No Parity* / 8 Databits, Even Parity / 8 Databits, Odd Parity	
Stopbits	1* / 2	Number of stopbits
Output format	Standard	(see mapping-tables in the coupler- / controller-manual)
	Alternative*	(see mapping-tables in the coupler- / controller-manual)
Data bytes (BK)	3* / 4 / 5	Number of data bytes (see mapping-tables in the coupler- / controller-manual)
RTS / CTS	Disable	Hardware handshake is not active
	Enable*	Hardware handshake is active RTS is set if receive buffer of the module contains more than 114 characters. RTS is reset if receive buffer of the module contains less than 104 characters. If CTS is set the module does not send any data.
Copy State Byte	Normal*	State byte and data bytes are transmitted in the same KBUS cycle
	Retarded	The state byte is transmitted one KBUS cycle later after data bytes are transmitted. This causes a lower data transmission rate.

Select box	Available settings	
XON / XOFF (send)	OFF*	The module does not support the XON/XOFF-protocol when sending data.
	ON	The module supports the XON/XOFF-protocol when sending data. The module sends the data delivered by the PLC until the XOFF (DC3==0x13) character is received from the communication partner. The transmission is halted until the XON (DC1==0x11) character is received.
XON / XOFF (receive)	OFF*	The module does not support the XON/XOFF-protocol when receiving data.
	ON	The module supports the XON/XOFF-protocol when receiving data. The module sends the XOFF control character if the receive buffer contains more than 110 characters. XON is sent once XOFF has been sent and the buffer containes less than 18 bytes.
Continous Send	OFF*	Continous data transmission from FIFO is not active.
	ON	Continous data transmission from FIFO is active. The send buffer is filled by the PLC (up to 16 bytes). The buffer content is sent with the rising edge in bit 3 of the control byte. Acknowledgement of the transmitted data is done by setting the bit 2 of the status byte. Bit 2 of the status byte is reset when bit 3 of the control byte is set.
	* default setting	

Press the **CLOSE** button to quit the parameter dialog box without storing parameters in the EEPROM of the module.

Press the **APPLY** button to store the changed parameters in the EEPROM of the module. The dialog box will not be closed.

Press the **DEFAULT** button to show the default settings for this module. The settings are stored in the EEPROM of the module using the **APPLY** button.

Press the **SAVE** button to save the actual settings into a file. A dialog box will be opened to enter a filename and path.

Press the **OPEN** button to open a file with already saved settings. A dialog box will be opened to enter a filename and path.

4.8.3.5 Serial Interface Module RS 485 750-653/003-000 (Parameter Dialog Box)

```
Settings for module : 750-653/003-000                    [X]
┌─────────────────────────────────────────┐  ┌──────────────┐
│ RS485 Interface (Adjustable)            │  │    Close     │
│ Baudrate:          9600 Baud *       [▼]│  ├──────────────┤
│ Data frame:        8 Databits, No-Parity * [▼]│ │   Apply    │
│ Stopbits:          1 *               [▼]│  │              │
│ Output format:     Alternative *     [▼]│  │   Default    │
│ Data bytes (BK):   3 *               [▼]│  │              │
│ Duplex Mode:       Fullduplex *      [▼]│  │   Save...    │
│ Copy State Byte:   Normal *          [▼]│  │              │
│ XON/XOFF (Send):   OFF *             [▼]│  │   Open...    │
│ XON/XOFF (Receive): OFF *            [▼]│  └──────────────┘
│ Module Type:       RS485 *           [▼]│
│ Continuous Send:   OFF *             [▼]│
└─────────────────────────────────────────┘
```

Order number and position of the selected I/O module are shown at the titlebar.

Following select boxes are shown in the dialog box:

Select box	Available settings	
Baudrate	1200 Baud / 2400 Baud / 4800 Baud / 9600 Baud* / 19200 Baud	
Data frame	7 Databits, Even Parity / 7 Databits, Odd Parity / 8 Databits, No Parity* / 8 Databits, Even Parity / 8 Databits, Odd Parity	
Stopbits	1* / 2	Number of stopbits
Output format	Standard	(see mapping-tables in the coupler- / controller-manual)
	Alternative*	(see mapping-tables in the coupler- / controller-manual)
Data bytes (BK)	3* / 4 / 5	Number of data bytes (see mapping-tables in the coupler- / controller-manual)
Duplex Mode	Fullduplex*	Simultaneous send and receive is possible with 4-wire connection.
	Halfduplex	Simultaneous send and receive is not possible with 2-wire connection.
Copy State Byte	Normal*	State byte and data bytes are transmitted in the same KBUS cycle
	Retarded	The state byte is transmitted one KBUS cycle later after data bytes are transmitted. This causes a lower data transmission rate.

Select box	Available settings	
XON / XOFF (send)	OFF*	The module does not support the XON/XOFF-protocol when sending data.
	ON	The module supports the XON/XOFF-protocol when sending data. The module sends the data delivered by the PLC until the XOFF (DC3==0x13) character is received from the communication partner. The transmission is halted until the XON (DC1==0x11) character is received.
XON / XOFF (receive)	OFF*	The module does not support the XON/XOFF-protocol when receiving data.
	ON	The module supports the XON/XOFF-protocol when receiving data. The module sends the XOFF control character if the receive buffer contains more than 110 characters. XON is sent once XOFF has been sent and the buffer contains less than 18 bytes.
Module Type	RS 485*	2-wire multipoint connections
	RS 422	4-wire point to point connections
Continous Send	OFF*	Continous data transmission from FIFO is not active.
	ON	Continous data transmission from FIFO is active. The send buffer is filled by the PLC (up to 16 bytes). The buffer content is sent with the rising edge in bit 3 of the control byte. Acknowledgement of the transmitted data is done by setting the bit 2 of the status byte. Bit 2 of the status byte is reset with bit 3 of the control byte.
	* default setting	

Press the **CLOSE** button to quit the parameter dialog box without storing parameters in the EEPROM of the module.
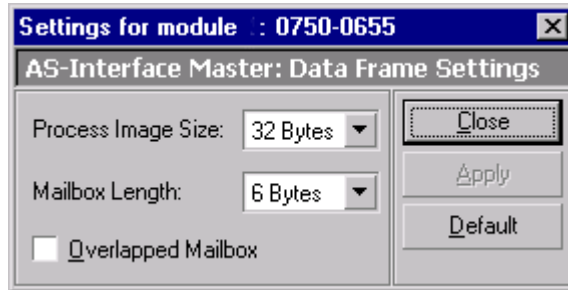
Press the **APPLY** button to store the changed parameters in the EEPROM of the module. The dialog box will not be closed.

Press the **DEFAULT** button to show the default settings for this module. The settings are stored in the EEPROM of the module using the **APPLY** button.

Press the **SAVE** button to save the actual settings into a file. A dialog box will be opened to enter a filename and path.

Press the **OPEN** button to open a file with already saved settings. A dialog box will be opened to enter a filename and path.

4.8.3.6 AS-interface Master Module 750-655 (Parameter Dialog Box)

Order number and position of the selected I/O module are shown at the titlebar.

Following select boxes are shown in the dialog box:

Select box	Available settings	
Process Image Size	12 Bytes, 20 Bytes, 24 Bytes*, 32 Bytes, 40 Bytes, 48 Bytes	
Mailbox Length	0 Bytes, 6 Bytes*, 10 Bytes, 12 Bytes, 18 Bytes (Mailbox sizes, which produce a larger process image than the selected process image size, are not released.)	
Overlapped Mailbox	OFF*	The mailbox data are placed in the process image firmly before the process data.
	ON	The mailbox can be faded in over the process data. The insertion takes place with the bit 5 in the control byte.
	* Default setting	

Press the **CLOSE** button to quit the parameter dialog box without storing parameters in the EEPROM of the module.

Press the **APPLY** button to store the changed parameters in the EEPROM of the module. The dialog box will not be closed.

Press the **DEFAULT** button to show the default settings for this module. The settings are stored in the EEPROM of the module using the **APPLY** button.

Note:
Please note: The structure of the process image may change due to process data length or mailbox length variations. As a result, the configuration of the higher-level controller should be modified if necessary.

5 Operation (Overview)

Following steps are necessary to monitor or control inputs and outputs of a fieldbus node:

Prepare communication connection ,

Determine node configuration ,

Select WAGO-I/O-CHECK operating mode ,

Select an I/O module ,

Display process data of the selected I/O module ,

Set output process data of the selected I/O module ,

and (if necessary)

Change parameters of the selected I/O module .

Important informations:

> *Warning!*
> *Never disconnect the PC from a coupler/controller, if WAGO-I/O-CHECK is in online-condition!*

> **Note:**
> Only for a node with MODBUS connection:
> Set the coupler/controller station switch to ´00´.

> **Note:**
> Only for a node with CAN connection:
> For couplers a COB-ID must be selected between 1 und 126.

> **Note:**
> For the start-up of a node with a praogrammable fieldbus controller it is necessary to stop the programm processing (cycle) in the controller (stop state)! For this move the slider next to the configuration interface to the middle setting.

5.1 Prepare Communication Connection

The following steps are necessary to prepare a communication connection:

- Switch off the voltage supply of the buscoupler / -controller.
- Open the cover of the configuration interface of the buscoupler / -controller.

Warning!
Do not touch the contacts of the configuration interface!
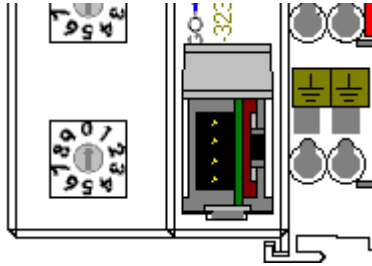
- Connect the configuration interface with the attendant plug of the communication cable 750-920.
- Connect the D-Sub plug of the communication cable to a free serial interface of the PC.
- Switch on the voltage supply of the buscoupler / -controller again.

You ca use the WAGO Radio Adapter 750-921 alternatively to the communication cable 750-920:

- Connect the WAGO Radio Adapter 750-921 with the configuration interface.
- Switch on the voltage supply of the buscoupler / -controller again.
- Start the Bluetooth® software on your computer.

- Start **WAGO-I/O-*CHECK*** and select the command COM-Port ... from the menu Settings.
- Select the serial interface used in the dialog box COM-Port Settings and close the dialog with the OK button.

WAGO-I/O-*CHECK* is now prepared for communication with the node.

5.2 Determining Node Configuration

You can determine the node configuration in the following manner:

- Use the command Read Configuration from the menu Node or
- press function key **<F5>** or

- click to the icon on the toolbar Node.

Note:
If the connected node contains digital I/O modules, these modules are described with a standard text. Use the command Rename from the menu Module or the button **RENAME** from the toolbar Module to change the description of the digital I/O modules.

> **Note:**
> A coupler does not recognize passive I/O modules. Therefore these
> modules are not displayed by **WAGO-I/O-*CHECK***.

The node will be displayed as a tree structure in navigationbar and as a graphic view in the node display area.

5.3 Select WAGO-I/O-CHECK Operating Mode

WAGO-I/O-*CHECK* provides the operation modes **Control-Mode ´Direct´**, **Control-Mode ´Collect´**, **Control-Mode ´Force´**, **Control-Mode ´Permanent´** and **Monitor-Mode** for the controlling and monitoring of the process data.

The operaton modes Control-Mode are used to monitor input and output process data as well as to control output process data. It is necessary to deactivate the fieldbus and to switch off PLC-functions (if a controller is connected) to control output data.

Select the operation mode Control-Mode ´Direct´ if outputs shall be set with a mouse click and be reset with the next mouse click on the corresponding control element.
To set this operation mode,

- select the menu command *Node\Control-Mode\Direct* or

- click the command **Direct** from the dropdown list next to the symbol
  from the toolbar **Node** or
- enter the shortkey **<Ctrl> + <Shift> + <D>**.

To set more then one output at the same time select the operation mode Control-Mode ´Collect´. You can arrange various output states and send them to the node with a mouseclick on the button **SEND DATA** .
To set this operation mode,

- select the menu command *Node\Control-Mode\Collect* or
- click the command **Collect** from the dropdown list next to the symbol
  from the toolbar **Node** or
- enter the shortkey **<Ctrl> + <Shift> + <C>**.

Select the operation mode Control-Mode ´Force´ if a digital output is to be active as long as a mouse key is pressed.
To set this operation mode,

- select the menu command *Node\Control-Mode\Force* or

- click the command **Force** from the dropdown list next to the symbol from the toolbar **Node** or
- enter the shortkey **<Ctrl>** + **<Shift>** + **<F>**.

If the output states are to remain in their current state after the termination of the connection between **WAGO-I/O-*CHECK*** and the node, select the operation mode Control-Mode ´Permanent´. A reset of the coupler / controller resets the outputs if the node is not connected to **WAGO-I/O-*CHECK***.
To set this operation mode,

- select the menu command *Node\Control-Mode\Permanent* or
- click the command **Permanent** from the dropdown list next to the symbol from the toolbar **Node** or
- enter the shortkey **<Ctrl>** + **<Shift>** + **<P>**.

Select the operation mode Monitor-Mode if input and output data shall only be monitored and no output control is desired.
To set this operation mode,

- select the menu command *Node\Monitor-Mode* or
- click the symbol from the toolbar **Node** or
- enter the shortkey **<Ctrl>** + **<Shift>** + **<M>**.

To change the operation mode of **WAGO-I/O-*CHECK*** simply enter to the corresponding command of the menubar or toolbar.

To switch off the active operation mode enter the corresponding command again or press **<F10>**.

Press **<F9>** to switch on the last selected operation mode again.

5.4 Selecting an I/O module

WAGO-I/O-*CHECK* provides the following methods to select a I/O module:

Node Display

Mouse

- Click the required I/O module in the graphic.

Keyboard

- Use the keys **<Ctrl>** + **<→>** to select the next I/O module or
- use the keys **<Ctrl>** + **<←>** to select the previous I/O module or

- use the keys **\<Ctrl\>** + **\<Home\>** to select the coupler or
- use the keys **\<Ctrl\>** + **\<End\>** to select the end module.

Navigationbar

Mouse

- Click the required I/O module in the tree.

Keyboard

- Use the key **\<↓\>** to select the next I/O module or
- use the key **\<↑\>** to select the previous I/O module or
- use the key **\<Home\>** to select the coupler or
- use the key **\<End\>** to select the end module.

5.5 Display Process Data of the Selected I/O Module

The following possibilities are available to display the process data in
WAGO-I/O-*CHECK*:

Select an I/O module and
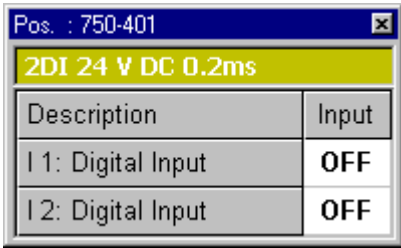
- select the Process data command in the menu **module**
- press the key **\<F6\>** or
- press the **\<Enter\>** key

Without selecting an I/O module the process data can be displayed

- by double clicking on an I/O module in the node display or
- by double clicking on the channel of an I/O module in the tree structure

Once one of these functions has been executed a dialog box appears to display
the process data of the selected I/O module.

Example: digital inputs
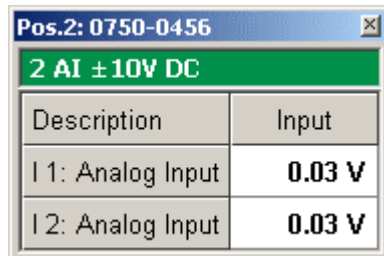
Pos. : 750-401	☒
2DI 24 V DC 0.2ms	
Description	Input
I 1: Digital Input	OFF
I 2: Digital Input	OFF

The text boxes of the input column indicate the state (ON / OFF) of the digital
inputs. If an input is active, the text ´ON´ is displayed on green background.

The states of the digital inputs are also shown in the node display by colored LED's.

Example: analog inputs

Pos.2: 0750-0456	
2 AI ±10V DC	
Description	Input
I 1: Analog Input	**0.03 V**
I 2: Analog Input	**0.03 V**

The text boxes show the individual analog values. Use the context menu to change the display between physical units (mA, V or °C) and hexadecimal units or display an additional status text box with hexadecimal, binary, decimal or text formatting.

The dialog boxes always appear at the same position on the screen. To display the process data of several I/O modules, the dialog boxes can be moved with the mouse.

5.6 Set Output Process Data of the Selected I/O Module
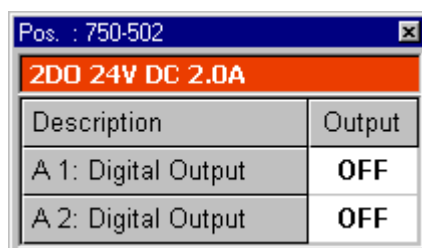
To set or reset outputs in **WAGO-I/O-*CHECK***, display the process data of an I/O module as previously described.

⚠️ *Warning!*
Outputs which are set manually by WAGO-I/O-CHECK (e.g. motor contactors, or valves) will remain until they are manually reset. In this case, switching the outputs off via control software (e.g. by limit switches) has no effect !

Example: digital outputs

Pos. : 750-502	
2DO 24V DC 2.0A	
Description	Output
A 1: Digital Output	**OFF**
A 2: Digital Output	**OFF**

To set or reset digital outputs in **WAGO-I/O-*CHECK*** the following alternatives are available:

- Click in the corresponding text box with the mouse or
- Select the corresponding text box using the **<Tab>** key. Using the **<Spacebar>** you can now set or reset the output.
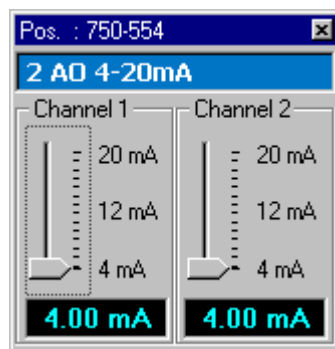
> **Note:**
> Please refer to the chapter Notes on Setting and Resetting of Digital I/O Modules concerning the reaction of digital outputs in the different operation modes.

> **Note:**
> The state of digital outputs is indicated in the node display by colored LED´s. To toggle the state it is also possible to click the LED´s (see next illustration).
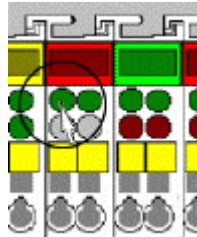
Example: analog outputs

To change the values of analog outputs the following possibilities are available:

- Use the sliders to change the output value.
- In the text box, enter a value in milliamps or volts, which the selected terminal output should provide or in hexadecimal units. The new value is not sent to the node until the **<Enter>*** key is pressed (* or **<CR>**, **<↵>**).

> **Note:**
> Please refer to the chapter Notes on Setting of Analog Output Modules concerning the reaction of analog outputs in the different operation modes.

Use the context menu to change the display between physical units (mA, V or °C) and hexadecimal units.

> **Note:**
> If the entered value is out of range for the selected I/O module a fault message will be displayed and the the previous valid value will be retained.

5.7 Change Parameters of the Selected I/O Module

The following parameter changes are possible:

Analog I/O Modules

Setting and readjusting the input module for RTDs 750-461/003-000,

Setting the input module for thermocouples 750-469/003-000,

Special Modules

Setting the serial interface module RS 232 C 750-650/003-000,

Setting the serial interface module RS 485 750-653/003-000.

5.7.1 Setting RTD Module 750-461/003-000

Open the parameter dialog box of the selected bus module by executing the command *Settings* in the context menu of the module in the node display or navigationbar.

→

Note:
Before changing the parameters make sure that you save the setted values in a parameter file. This will enable you to access the original values in the case of an incorrect parameterization. To do so, use the SAVE and OPEN buttons in the parameter dialog box.

Select the connected sensor type and set the required operation parameters.

Press the DEFAULT button to show the default values for this module. You can change the shown values if required.

Store the changed values in the EEPROM of the module by pressing the APPLY button and quit the parameter dialog box by pressing the CLOSE button.

Readjusting the RTD-module 750-461/003-000

A suitable calibration device (e.g. an electronic calibrator or highly accurate precision resistors) is needed to adjust the module. The adjustment with two resistors of 100Ohm and 200Ohm is described below. 100Ohm corresponds to 0°C and 200Ohm to 266.4°C according to DIN IEC 751.

Open the parameter dialog box of the selected bus module.

Set the module on Pt100 and 3-wire connection (RTD type = Pt100 and connection = 3-wire) and switch off the user and WAGO scaling (user and WAGO scaling = OFF). The temperature is emitted at intervals of 1/16°C. Press the ALIGNMENT button to get to the alignment dialog box. First connect the 100Ohm resistor and set the process value to 0x0000 (0°C) by modifying

the offset. Afterwards, connect the 200Ohm resistor and set the process value to 266.4°C $\hat{=}$ 16*266.4 = 0x10A6 by modifying the gain.

If required, you can also adjust the offset for the wire resistance when performing a 2-wire measurement. For that purpose, select the 2-wire connection in the settings dialog box and set the process value to 0x0000 in the alignment dialog box at a resistance of 100Ohm with the 2-wire offset.

This procedure can also be performed in any other type of operation (Ni100, Pt1000 etc.). The values for the alignment are stored only once per channel. The value for the wire resistance adjustment is stored only once per module.

If the values of the alignment register are completely wrong, you can use the following initial values:

Offset	0xECF0
Gain	0x2700
2-Wire Offset	0x0180

Store the changed values in the EEPROM of the module by pressing the **OK** button and quit the alignment dialog box by pressing the **CANCEL** button.

5.7.2   Setting Thermocouple Module 750-469/003-000

Open the parameter dialog box of the selected bus module by executing the command *Settings* in the context menu of the module in the node display or navigationbar.

Note:
Before changing the parameters make sure that you save the setted values in a parameter file. This will enable you to access the original values in the case of an incorrect parameterization. To do so, use the **SAVE** and **OPEN** buttons in the parameter dialog box.

Select the connected sensor type and set the required operation parameters.

Press the **DEFAULT** button to show the default values for this module. You can change the shown values if required.

Store the changed values in the EEPROM of the module by pressing the **APPLY** button and quit the parameter dialog box by pressing the **CLOSE** button.

5.7.3 Setting Serial Interface Module RS 232 C 750-650/003-000

Open the parameter dialog box of the selected bus module by executing the command *Settings* in the context menu of the module in the node display or navigationbar.

Note:
Before changing the parameters make sure that you save the setted values in a parameter file. This will enable you to access the original values in the case of an incorrect parameterization. To do so, use the SAVE and OPEN buttons in the parameter dialog box.

Set the communication parameters Baud Rate, Data Frame and Stopbits and further parameters (e.g. RTS/CTS or XON/XOFF) corresponding to the communication partner.

Press the DEFAULT button to show the default values for this module. You can change the shown values if required.

Store the changed values in the EEPROM of the module by pressing the APPLY button and quit the parameter dialog box by pressing the CLOSE button.

5.7.4 Setting Serial Interface Module RS 485 750-653/003-000

Open the parameter dialog box of the selected bus module by executing the command *Settings* in the context menu of the module in the node display or navigationbar.

Note:
Before changing the parameters make sure that you save the setted values in a parameter file. This will enable you to access the original values in the case of an incorrect parameterization. To do so, use the SAVE and OPEN buttons in the parameter dialog box.

Set the communication parameters Baud Rate, Data Frame and Stopbits and further parameters (e.g. XON/XOFF) corresponding to the communication partner.

Press the DEFAULT button to show the default values for this module. You can change the shown values if required.

Store the changed values in the EEPROM of the module by pressing the APPLY button and quit the parameter dialog box by pressing the CLOSE button.

5.8 Operation of AS-interface Master Module 750-655

Working with the AS-interface master module 750-655

In order to work with the AS-interface master module 750-655, first set up the communication connection to your node. Then read out the node configuration and select the required module in the navigation screen or node view.

Next set the required process data and mailbox length in the parameter dialog box.

After this, you can set up the required operation mode for the master in the process data dialog box or select a slave for further processing from the list of slave addresses.

Use the diagnostics function in order to correct configuration errors.

5.8.1 Setting up the AS-interface Process Data and Mailbox Length

Open the parameter dialog box of the selected bus module by executing the command *Settings* in the context menu of the module in the node display or navigationbar.

Open the parameter dialogue for the selected bus module. To do this, click on the Settings command in the context menu for the module (node view or navigation).

The size of the internal bus process image is specified with the Process Image Length selection box. You can choose values of 12, 20, 24, 32, 40 or 48 bytes.

The size of the mailbox is specified with the Mailbox Length selection box. You can set values of 0, 6, 10, 12 or 18 bytes.

Note:
If a mailbox length of 0 bytes is selected, it will only be possible to display process data for digital slaves in monitor mode. Process data cannot then be displayed or set up in control mode.

The Overlapped Mailbox selection box is used to determine whether the mailbox data are overlapped with the AS-interface process data (selection box activated) or whether the AS-interface process data are transmitted after the mailbox data (selection box not activated).

The available combinations of options correspond to the configurations that can be set up using the Profibus or CANopen type files.

To display the default values for this module, click on **DEFAULT**. The displayed values can then be further modified.

Transfer the set values to the non-volatile memory of the module by clicking **ACCEPT** and exit the dialog box by pressing **CLOSE**.

5.8.2 Setting up the Operating Mode for the AS-interface Master Module

Open the process data dialogue for the selected bus module. To do this, click on the *Process data* command in the context menu for the module (node view or navigation).

The current state of the AS-interface master is shown in the properties area. The required operating mode for the AS-interface master is set by means of the control flags.

5.8.3 Including a new slave in the AS-interface network

Open the process data dialogue for the selected bus module. To do this, click on the *Process data* command in the context menu for the module (node view or navigation). Switch on the **Configuration active (CA)** control flag in the Properties area for the master.

You can include a new slave in the AS-interface network in different ways.

Connect the new slave to the AS-interface network with the address 0. The master will detect the slave automatically and will report this in the Properties area for the master with the message "Slave at address 00 (S0)". Click on this message to select the new slave and set the required address in the **New Address** field. The master will then scan all the slaves. Select the new slave from the slave overview and accept the configuration data by pressing STORE DETECTED and save the data in the non-volatile memory in the master by pressing STORE CONFIG.

Alternatively, set up the slave with the necessary configuration at the required address. Select the address by clicking on the appropriate line in the slave overview. Then set up the required configuration. Accept the configuration data by pressing SET PROJECTED and save the data in the non-volatile memory in the master by pressing STORE CONFIG. The newly set-up slave will be detected as missing by the master after scanning the slaves. Switch off the **Configuration Active (CA)** control flag. Connect the new slave to the AS-interface network. The master will automatically assign the address of the set-up slave when the **Auto Address Enable (AAe)** control flag is switched on and the following requirements for automatic addressing are fulfilled:

1. There is one and only one slave with the address 0 in the network,
2. One and only one slave is detected by the master as missing,
3. The configuration of the missing slave corresponds to that of the new slave.

The fulfilment of the requirements is indicated by the **Auto Address Assign (AAs)** and **Auto Address Available (AAv)** status flags.

5.8.4   Selecting an AS-interface Slave from Slave List

Open the process data dialog box for the selected bus module. To do this, click on the *Process data* command in the context menu for the module (node view or navigation).

After opening the dialog box, the connected AS-interface slaves are scanned and the result shown in the list of slave addresses in the left-hand area of the dialog box.

Note:
Scanning the slaves requires some time. For monitoring purposes, the slave that is currently being scanned is indicated in the slave overview status window.

You can switch the display between A-, B- or Safety at Work Slaves with the selection field in the header line.

Select the required slave by clicking on the appropriate entry in the table. The configuration, parameter and process data for the selected slave will be shown in the right-hand part of the dialogue box.

Here, you can configure this slave or observe and set up its process data.

If the selected slave is a Safety at Work Monitor, then the Safety at Work Monitor will be shown in place of the slave properties.

In order to identify a slave as a Safety at Work Monitor, choose the command *Safety at Work Monitor* from the *Slave* menu.

5.8.5   Configuration of an AS-interface Slave

You can set up the configuration (IO, ID, ID1, ID2) and the required parameters for the selected slave and also assign a new address.

To set up the required configuration, select the required slave type from the **Permanent Configuration** line in the **Description** drop-down list. Alternatively, you can also save the slave type that has just been read as a permanent configuration by pressing the **STORE ACTUAL CONFIGURATION** button. The set values are accepted by means of the **SET PERMANENT CONFIGURATION** button. When all slaves have been configured, save the configuration data in the master by pressing the **SET PERMANENT CONFIGURATION** button.

The parameters are set by setting the bits B0 – B3 in the **Permanent Parameter** line. Alternatively, here too, you can save the slave type that has just been read as permanent parameters by pressing the **WRITE ACTUAL** button. The set values are accepted by means of the **SET PERMANENT** button. When the parameters of all slaves have been set, save the parameter data in the master by pressing the **STORE PARAMETER** button. Please refer to the description of the appropriate slaves for the meaning of the parameters.

In order to assign a new address to the selected slave, enter the number of the new address in the **New Address** field and then press the **SET** button. Entering of addresses that are already occupied is rejected with an error message.

5.8.6 Monitoring and Setting of AS-interface Process Data

The current process data for the selected slave are displayed in the data area.

The input data are shown in the **Input** line and the output data can be set in the **Output** line. In doing so, the values are displayed depending on the function type. Digital functions are indicated by the states ON / OFF. Analogue functions are displayed in hexadecimal format, as the physical measured variables relating to the analog inputs and outputs are not known to the master.

The digital output data are set by clicking on the appropriate bits and the analogue output data are are set by entering the hexadecimal value for the appropriate channel.

5.8.7 AS-interface Diagnosis

The flags in the Properties area for the master are provided for diagnosing the AS-interface master.

The status flags are used for information; the operating mode for the AS-interface master can be set with the control flags in the right-hand column.

The list of all the slaves with configuration errors (LCS) and the list of all slaves, which switch the master off line in the case of a fault (LOS), are provided for diagnosing the AS-interface slaves.

The LCS list shows all slaves with configuration errors. The entries in the list contain the slave address, the number of errors that have occurred since the last read-out, the configuration ID and the slave description. Errors that occur and their frequency are stored in the master. In this way, even short-term errors can be detected. After it has been read out, the error memory is reset.

Select those slaves from the LOS list, which are to switch the master into the offline state in the case of a configuration error, by clicking the check boxes next to the slave address. You can mark all slaves with the **ALL** button and reset all marked entries with the **NONE** button.

6 Command Reference

6.1 System Menu (Commands)

6.1.1 Restore (System Menu)

Use this command to restore the active window to the size before using the commands minimize or maximize.

→ **Note:**
This command ist only available if the window is minimized or maximized.

Shortcuts

Mouse: Click the restore button in the titlebar

         or

         double click to the titlebar.

6.1.2 Move (System Menu)

Use this command to move the window or the dialog box wih the arrow keys.

→ **Note:**
This command ist not available if the window is maximized.

Shortcuts

Mouse: Pull the titlebar of the window.

6.1.3   Change Size (System Menu)

Use this command to resize the active window.

✛

After the cursor has changed to crossed arrows:

1	Press arrow keys to move the cursor to the margin you want to move.
2	Press arrow keys to move the frame.
3	Press **<Enter>** key, if the window reaches the needed size.

Note:
This command ist not available if the window is maximized.

Shortcuts

Mouse: Pull the resize frames of the window.

6.1.4   Minimize (System Menu)

Use this command to minimize the window.

Double-click the icon to enlarge the window.

Note:
This command ist not available if the window is already minimized.

Shortcuts

Mouse: Click the minimize button in the titlebar

                    _.

6.1.5   Maximize (System Menu)

Use this command to maximize the window to the entire screen.

Note:
This command is not available if the window is already maximized.

Shortcuts

Mouse: Click the maximize button in the titlebar

                    □ or

double click to the titlebar.

6.1.6 Close (System Menu)

Use this command to close the active window or dialog box.

Shortcuts

Mouse: Click the close button in the titlebar

⊠ or

double click to the systemmenu icon

▦.

Keyboard: **<Alt>** + **<F4>**

6.2 Menu File (Commands)

6.2.1 New (Menu File)

Use this command to logoff the node currently used and to initialize a new node.

Use the command Open to open an existing node description file.

To determine the descriptions of the I/O modules of the connected node, use the Read Configuration statement from the *Node* menu.

Shortcuts

Toolbar:

Keyboard: **<Ctrl>** + **<N>**

6.2.2 Open (Menu File)

Use this command to open an existing node description.

WAGO-I/O-*CHECK* opens the Open File dialog box to select the description file.

Use the command New to initialize a new node.

Shortcuts

Toolbar:

Keyboard: **<Ctrl>** + **<O>**

6.2.2.1 Open File (Dialog Box)

The following options allow you to select a node description to be opened:

Look in

Select the drive and the folder in which **WAGO-I/O-*CHECK*** has saved the node description file which you want to open.

File name

Enter file name or select a file from list. Only files corresponding to the file extension selected in "Files of type" will be listed.

Files of type

Select the type of file to be opened:

> **WAGO-I/O-*CHECK*** Node Description (*.xml)

6.2.3 Save (Menu File)

Use this command to save the active node description under its current name and directory.

With the first saving of a node description **WAGO-I/O-*CHECK*** opens the Save As dialog box , which prompts you for a filename.

Shortcuts

Toolbar:

Keyboard: **<Ctrl>** + **<S>**

6.2.4 Save As (Menu File)

Use this command to save the active node description in a different file or directory.

WAGO-I/O-*CHECK* opens the Save As dialog box to enter path and filename

Use the command Save to save the active node description without changing filename or path.

6.2.4.1 Save/Save As (Dialog Box)

The following options allow you to enter/select the name and location of the node description to be saved:

Save in

Select the drive and the folder in which **WAGO-I/O-*CHECK*** should store the node description file.

File name

Enter a new file name for the node description, so that the file can be stored under a different name. **WAGO-I/O-*CHECK*** adds the extension to the file name that you have assigned in the "Save as type" field.

Save as type

Select the type of file to be saved:

> **WAGO-I/O-*CHECK*** Node Description (*.xml)

6.2.5 Print (Menu File)

Use this command to print a node description.
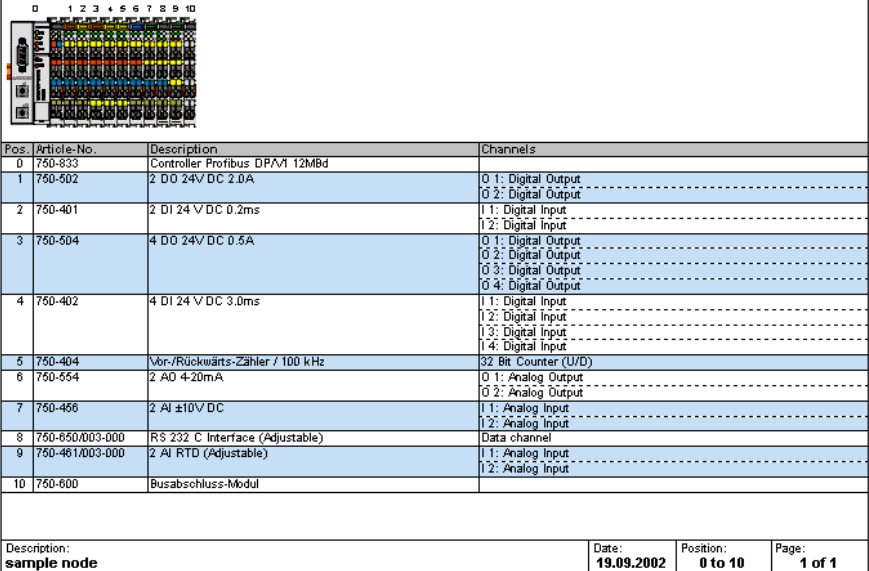
WAGO-I/O-*CHECK* opens the Print dialog box, where you may specify the range of pages to be printed, the number of copies, the destination printer, and other printer setup options.

Shortcuts

Keyboard: **<Ctrl> + <P>**

The print out includes the node display and a list of the connected components with their descriptions.

Print output:

6.2.5.1   Print Dialog Box

The following options allow you to specify how the document should be printed:

Printer

This is the active printer and printer connection. Choose the Setup option to change the printer and printer connection.

Setup

Displays the Print Setup dialog box, where you can select a printer and printer connection.

Print Range

Specify the pages you want to print:

> **All**   Prints the entire document.
>
> **Selection** Prints the currently selected text.
>
> **Pages**   Prints the range of pages you specify in the From and To boxes.

Copies

Specify the number of copies you want to print for the above page range.

Collate Copies

Prints copies in page number order, instead of separated multiple copies of each page.

Print Quality

Select the quality of the printing. Generally, lower quality printing takes less time to produce.

6.2.5.2 Print Progress dialog box

The Printing dialog box is shown during the time that **WAGO-I/O-*CHECK*** is sending output to the printer. The page number indicates the progress of the printing.

To abort printing, choose Cancel.

6.2.6 Print Preview (Menu File)

Use this command to display the active node as it would appear when printed.

When you choose this command, the main window will be replaced with a print preview window in which one or two pages will be displayed in their printed format. The print preview toolbar offers you options to view either one or two pages at a time; move back and forth through the document; zoom in and out of pages; and initiate a print job.

Print preview window:
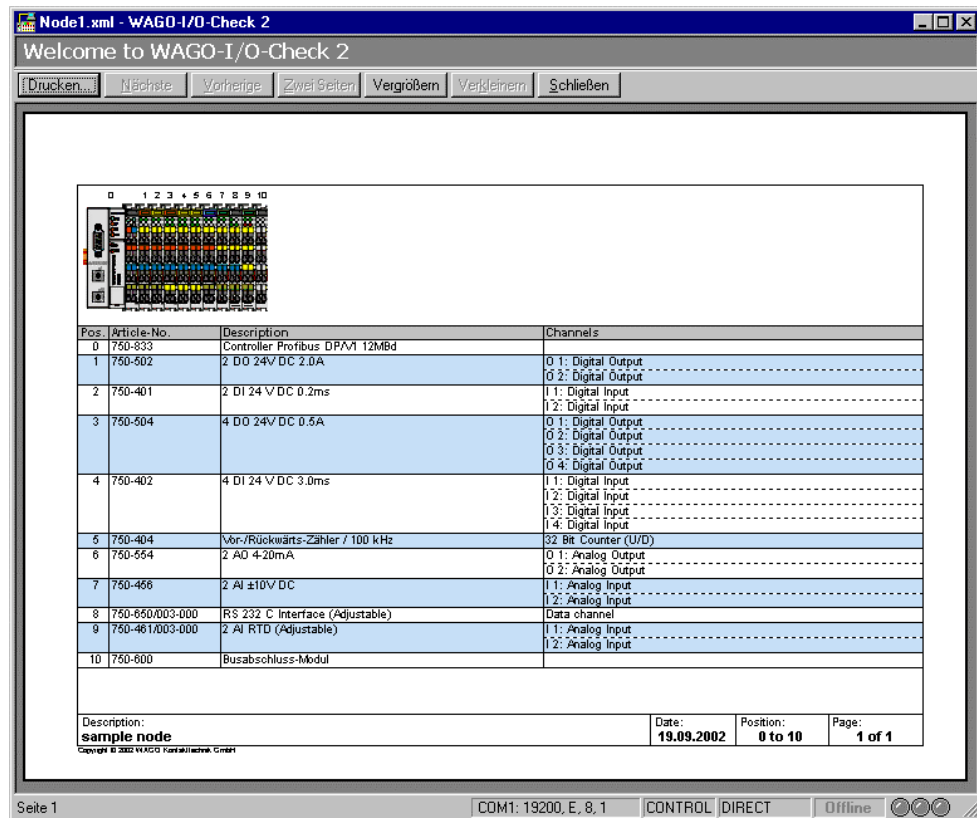
6.2.6.1 Print Preview toolbar

The print preview toolbar offers you the following buttons:

PRINT

Bring up the print dialog box, to start a print job.

NEXT PAGE

Preview the next printed page.

PREV PAGE

Preview the previous printed page.

ONE PAGE / TWO PAGES

Preview one or two printed pages at a time.

ZOOM IN

Take a closer look at the printed page.

ZOOM OUT

Take a larger look at the printed page.

CLOSE

Return from print preview to the editing window.

6.2.7   Print Setup (Menu File)

Use this command to select a printer and a printer connection.

WAGO-I/O-*CHECK* opens the Print Setup dialog box, where you specify the printer and its connection.

6.2.7.1   Print Setup dialog box

The following options allow you to select the destination printer and its connection.

Printer

Select the printer you want to use. Choose the Default Printer; or choose the Specific Printer option and select one of the current installed printers shown in the box. You install printers and configure ports using the Windows Control Panel.

Orientation

The print output was optimized for landscape printing. Do not change this setting.

Paper Size

The print output was optimized for printing on A4. Do not change this setting.

Paper Source

Some printers offer multiple trays for different paper sources. Specify the tray here.

Options

Displays a dialog box where you can make additional choices about printing, specific to the type of printer you have selected.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

6.2.8 File List (Menu File)

The file list contaíns the four last proceded node descriptions. To open one of these node descriptions please doubleclick on the corresponding filename.

6.2.9 Exit (Menu File)

Use this command to exit from **WAGO-I/O-*CHECK***.

As an alternative you can choose the command ***Close*** from the ***System Menu***. **WAGO-I/O-*CHECK*** asks if you want to save files with changes not yet saved.

Shortcuts

Mouse: Click on the Close button in the title bar.

Keyboard: **<Alt>** + **<F4>**

6.3 Menu View (Commands)

6.3.1 Output Area (Menu View)

Use this command to toggle the output area ON or OFF.

In the output area all actions and messages are listed in chronological order.

Once the output area is toggled on, the corresponding menu item is hooked.

6.3.2 Navigation Bar (Menu View)

Use this command to toggle the navigation bar ON or OFF.

In the navigation bar the active node is displayed in a tree structure. Detailed substructures can be swiched ON or OFF.

Once the navigation bar is toggled on, the corresponding menu item is hooked.

6.3.3 Caption (Menu View)

Use this command to toggle the heading of the output area ON or OFF.

Once the heading is toggled on, the corresponding menu item is hooked.

6.3.4 Zoom (Menu View)

Use this command to open the *Zoom* submenu from the *View* menu:
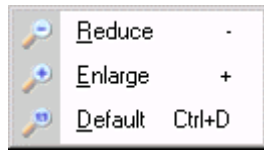
Reduce　　　　　Reduces the size of the node display.

Enlarge　　　　　Enlarges the size of the node display.

Default　　　　　Displays the node with its original size.

6.3.5 Statusbar (Menu View)

Use this command to toggle the statusbar ON or OFF.

The statusbar describes actions of menu entries or toolbar buttons if these are pressed and held down. It also displays download actions and communications states.

Once the statusbar is toggled on the corresponding menu item is hooked.

6.4 Submenu Zoom (Commands)

6.4.1 Reduce (Menu View\Zoom)

Use this command to reduce the size of the display node.

Shortcuts

Toolbar:　　　　

Keyboard:　　　　**<->** on the number block

6.4.2 Enlarge (Menu View\Zoom)

Use this command to enlarge the size of the display node.

Shortcuts

Toolbar:　　　　

Keyboard:　　　　**<+>** on the number block

6.4.3 Default (Menu View\Zoom)

Use this command to display the node with its original size.

Shortcuts

Toolbar:

Keyboard: **<Ctrl>** + **<D>**

6.5 Menu Node (Commands)

6.5.1 Read Configuration (Menu Node)

Use this command to read the description of the I/O modules from the connected node.

The types of analog I/O modules and special modules are automatically recognized by **WAGO-I/O-*CHECK*** when reading the node. Digital I/O modules are read with a standard description and can be specified by the user. Use the command Rename from the menu Module or the button **RENAME** from the toolbar Module to change the description of the digital I/O modules.

The node will be displayed as a tree structure in the navigationbar and as a graphic view in the node display.

Shortcuts

Toolbar:

Keyboard: **<F5>**
                or
                <Ctrl> + **<Shift>** + **<R>**

→ | **Note:**
A coupler cannot recognize passive I/O modules. Therefore these modules are not displayed by **WAGO-I/O-*CHECK***.

6.5.2 Control-Mode (Menu Node)

Use this command to open the ***Control-Mode*** submenu from the ***Node*** menu:

<u>D</u>irect	Ctrl+Shift+D
<u>C</u>ollect	Ctrl+Shift+C
<u>F</u>orce	Ctrl+Shift+F
<u>P</u>ermanent	Ctrl+Shift+P

Direct   Toggles the Control-Mode Direct ON or OFF. The activated status is immediately available at the modules.

Collect   Toggles the Control-Mode Collect ON or OFF. The activated states of the outputs are stored and sent to the modules all at once on pressing a key.

Force   Toggles the Control-Mode Force ON or OFF. The activated output states are available at the modules only for the time of pressing a key.

Permanent   Toggles the Control-Mode Permanent ON or OFF. The activated output states are immediately available at the modules and remain active even after an interruption of the fieldbus connection to the node.

The Control Modes serve to display the input and output data of the connected node. Output data can be set when the fieldbus is deactivated. For controllers the PLC functionalities also have to be deactivated.

By activating one Control Mode, the remaining Control Modes and the Monitor Mode are deactivated.
If a Control Mode is activated, a check mark is displayed next to the menu item and the tool in the tool bar is displayed in color.

The Control Mode will be deactivated when quitting **WAGO-I/O-*CHECK***.
The user will be asked to confirm the interruption of the connection.

Shortcuts

Toolbar:

When clicking on the button Control Mode in the toolbar **Node**, the chosen Control Mode is activated or deactivated. The Control Mode can be chosen via the appropriate pull down menu.

6.5.3   Monitor-Mode (Menu Node)

Use this command to toggle the Monitor-Mode ON or OFF.

The Monitor-Mode exclusively displays input or output data of the connected node. Outputs cannot be activated.

Activation of the Monitor-Mode entails deactivation of the Control-Modes. If the Monitor-Mode is activated, the symbol next to the menu item is framed and the symbol in the tool bar is displayed in color.

When you exit **WAGO-I/O-*CHECK***, the Monitor-Mode will be deactivated, if still active. You will be asked to confirm the interruption of the connection.

Shortcuts

Toolbar:

Keyboard: **<Ctrl>** + **<Shift>** + **<M>**

6.5.4   Rename (Menu Node)

Use this command to change the describing name of the node.

WAGO-I/O-*CHECK* opens a dialog box for the input of a new node description text.

Press the **OK** button to save the new description and close the dialog box or press the **CANCEL** button to close the dialog box without saving.

6.6 Submenu Control-Mode (Commands)

6.6.1 Direct (Menu Control-Mode)

Use this command to toggle the Control Mode Direct ON or OFF.

Digital outputs can be activated by clicking on the display field in the process data dialog box or on the LED in the node display or by hitting the **<space bar>**. Clicking or hitting the **<space bar>** another time deactivates the output.

Analog output values are set in the process data dialog box by moving the slides or by inputting a value into the display field and hitting the **<Enter>** key.

Values for specialty modules are set in the process data dialog by inputting them into the display field and hitting the the **<Enter>** key.

Shortcuts

Keyboard: **<Ctrl>** + **<Shift>** + **<D>**

6.6.2 Collect (Menu Control-Mode)

Use this command to toggle the Control Mode Collect ON or OFF.

As long as this Mode is activated, an additional window called 'Output Data' with a **SEND** button is opened:
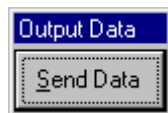
For activation and deactivation of the digital outputs see Control Mode Direct. However, the modified output states are not sent directly but are latched and send all together to the coupler or controller after clicking on the button **SEND**. This makes it possible to simulate the performance of a PLC when writing several outputs.

Shortcuts

Keyboard: **<Ctrl>** + **<Shift>** + **<C>**   Toggle the Control-Mode
                 Collect ON or OFF

                 <Ctrl> + **<Shift>** + **<S>**   Send modified output states

6.6.3 Force (Menu Control-Mode)

Use this command to toggle the Control Mode Force ON or OFF.

A digital output is activated as long as the left mouse button or the space bar is pushed.

Shortcuts

Keyboard: **<Ctrl>** + **<Shift>** + **<F>**

6.6.4 Permanent (Menu Control-Mode)

Use this command to toggle the Control Mode Permanent ON or OFF.

This command is only enabled if this mode is supported by the coupler or controller used.

For activation and deactivation of the digital outputs see Control Mode Direct. However, the der Control Mode Permanent and the activated outputs will not be deactivated automatically when **WAGO-I/O-*CHECK*** is quit.

The deactivation of the Control Mode Permanent, hence the deactivation of the outputs is possible at any time through a coupler/controller reset. The controller also allows a deactivation by starting the PLC application. When using Profibus, Interbus and Ethernet, the Control Mode Permanent will also be deactivated when the master is booted up.

When **WAGO-I/O-*CHECK*** is quit, the user is warned that activated outputs in this mode will still be activated, even after terminating the connection to the node.

Shortcuts

Keyboard: **<Ctrl>** + **<Shift>** + **<P>**

6.7 Menu Module (Commands)

6.7.1 Process Data (Menu Module)

Use this command to open the dialog box process data for a selected I/O module.

Shortcuts

Mouse: Doubleclick on the I/O module for which you want to display the process data.

Keyboard: **<F6>**
                  or
                  Ctrl> + <Shift> + <V>
                  or
                  select the I/O module using the control keys **<Ctrl> + <→>**
                  or   **<Ctrl> + <←>** or the mouse and press the **<Enter>**
                  key if the desired modul is selected.

Note:
This command is only available if the configuration of a connected node has been read or a node description file has been opened.

6.7.2 Rename (Menu Module)

Use this command to rename digital I/O modules.

Digital I/O modules are read with a standard description and can be specified by the user. The dialog box shows a type-specific list of part numbers and descriptions.

Note:
This command is only available if a digital I/O module has been selected.

6.7.3 Settings (Menu Module)

Use this command to parameterize I/O Modules.

The parameter dialog box shows a module-specific list of adjustable parameters.

→ **Note:**
This command is only available if the parameters of the selected module are changeable. A list of respective I/O Modules is shown in chapter parameter dialog boxes.

6.8 Menu Settings (Commands)

6.8.1 COM-Port... (Menu Settings)

Use this command to select and configure the serial PC interface for communication with the node.

WAGO-I/O-*CHECK* opens the dialog box Serial Interface Settings to change required settings.

Shortcuts

Keyboard: **<F8>**

6.8.2 Language (Menu Settings)

Use this command to open the ***Language*** submenu from the ***Settings*** menu:
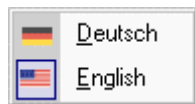
Use the commands to select the desired language for the WAGO-I/O-CHECK application.

Shortcuts

Keyboard: **<Ctrl>** + **<Shift>** + **<L>**

This shortcut always switches to the next language.

6.9 Menu Help (Commands)

6.9.1 Help Topics (Menu Help)

Use this command to open the list of contents of the **WAGO-I/O-*CHECK*** help topics.

From this mask you can jump into topics which will explain the use of **WAGO-I/O-*CHECK*** step by step.

As soon as help is opened it is always possible to click the **CONTENTS** button and return to the list of contents or to click the **INDEX** button and return to the index list.

6.9.2 Help Index (Menu Help)

Use this command to open the index list of the **WAGO-I/O-*CHECK*** help topics.

From this mask you can jump into topics which will explain the use of **WAGO-I/O-*CHECK*** step by step.

As soon as help is opened it is always possible to click the **INDEX** button and return to the index list or to click the **CONTENTS** button and return to the list of contents.

6.9.3 Context Help (Menu Help)

Use this command to receive help about a certain part of **WAGO-I/O-*CHECK***.

When the Context help button is selected in the toolbar the cursor changes to an arrow with a question mark. Click at any point in the **WAGO-I/O-*CHECK*** window, for example on a button in the toolbar. The help topic covering the clicked element will appear.

Shortcuts

Keyboard: **<Shift>** + **<F1>**

6.9.4 Using Help (Menu Help)

Use this command to get help on using help.

6.9.5 Info (Menu Help)

Use this command to display copyright and version information about **WAGO-I/O-*CHECK***.

6.10 Function Keys and Shortcuts

Function Keys/ Shortcuts	Function	Menu Command
\<Ctrl\> + **\<N\>**	Initialize a new node description	*File\New*
\<Ctrl\> + **\<O\>**	Open an existing node description	*File\Open*
\<Ctrl\> + **\<S\>**	Save the active node description	*File\Save*
\<Ctrl\> + **\<P\>**	Print the active node descrption	*File\Print*
\<Alt\> + **\<F4\>**	Exit from **WAGO-I/O-*CHECK***	*File\Exit*
\<−\> (numerical pad)	Node display: reduce size	*View\Zoom\Reduce*
\<+\> (numerical pad)	Node display: enlarge size	*View\Zoom\Enlarge*
\<Ctrl\> + **\<Shift\>** + **\<D\>**	Node display: default size	*View\Zoom\Default Size*
\<F1\>	Start online help	*Help\Help Topics*
\<Shift\> + **\<F1\>**	Activate context help	*Help\Context Help*
\<F4\>	Settings of fieldbuscoupler/ -controller	
\<F5\> or **\<Ctrl\>** + **\<Shift\>** + **\<R\>**	Read configuration of the connected node	*Node\Read Configuration*
\<Ctrl\> + **\<Shift\>** + **\<D\>**	Switch Control-Mode ´Direct´ on/off	*Node\Control-Mode\Direct*
\<Ctrl\> + **\<Shift\>** + **\<C\>**	Switch Control-Mode ´Collect´ on/off	*Node\Control-Mode\Collect*
\<Ctrl\> + **\<Shift\>** + **\<S\>**	Control-Mode ´Collect´: send data	
\<Ctrl\> + **\<Shift\>** + **\<F\>**	Switch Control-Mode ´Force´ on/off	*Node\Control-Mode\Force*
\<Ctrl\> + **\<Shift\>** + **\<P\>**	Switch Control-Mode ´Permanent´ on/off	*Node\Control-Mode\Permanent*
\<Ctrl\> + **\<Shift\>** + **\<M\>**	Switch Monitor-Mode on/off	*Node\Monitor-Mode*
\<F6\>	View process data of the selected module	*Module\Process Data ...*
\<F7\>	Start diagnosis	
\<F8\>	Configure serial interface to the node	*Settings\COM-Port ...*
\<F9\>	Switch last active mode on	
\<F10\>	Switch active mode off	
\<Ctrl\> + **\<→\>**	Node display: select next module	
\<Ctrl\> + **\<←\>**	Node display: select previous module	
\<Ctrl\> + **\<Home\>**	Node display: select coupler / controller	
\<Ctrl\> + **\<End\>**	Node display: select end module	
\<Ctrl\> + **\<↓\>**	Navigationbar: select next module	
\<Ctrl\> + **\<↑\>**	Navigationbar: select previous module	
\<Return\> or **\<Enter\>** or **\<CR\>** or **\<↵\>**	Dialog box process data: send process data of the selected module to the node	
\<Tab\> or **\<→│\>**	Dialog box process data: select a channel	

Function Keys/ Shortcuts	Function	Menu Command
<Space>	Dialog box process data: set / reset output	

7 Index

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