Software Manual

safety - control - motion - interface

OS6.0 Safety

Operator Software for certified safety devices

Product features:

- For PCs and notebooks with Windows 7 or higher
- Easy parametrization, configuration and monitoring
- Additional editor tool for parameter file management
- Extensive features for test purposes and frequency calibration

motrona GmbH, Zwischen den Wegen 32, DE - 78239 Rielasingen, Tel. +49 (0) 7731 9332-0, Fax +49 (0) 7731 9332-30, info@motrona.com, www.motrona.com

Version:	Description:
Manual: Os60_Safety_01a_oi/March 15/kk/ag	First Edition
Software: Os6.0v0.9.16.3	
Manual: Os60_Saftey_01b_oi/Aug. 15/ag	Second version with diverse corrections and extensions
Software: Os6.0v0.9.16.3	

Legal notices:

Representation note:

In order to represent this manual correctly, please only use the „Adobe Acrobat® Reader" software, which is downloadable for free on https://get.adobe.com/de/reader/. With other PDF reader programs, no perfect representation can be guaranteed.

Table of Contents

1. General 4
   1.1 Appropriate Use 4
2. OS6.0 Overview 4
   2.1. Safety Mode 5
   2.2. Structure and differences of the Safety Mode 5
   2.3. Safety Components for DS2xx Units 6
      2.3.1. Info field 8
      2.3.2. Parameter List 9
      2.3.3. Inputs 14
      2.3.4. States 15
      2.3.5. Monitor 16
      2.3.6. Exception: Lost Connection … 24
3. Serial Configuration 25
      3.1.1. Overview 26
      3.1.2. General Operating Elements 27
      3.1.3. Configuration Selection 28
      3.1.4. Operating Elements 29
      3.1.5. Status Information 29
4. Editor Tool for Parameter Files 30
      4.1.1. Opening the Editor 30
      4.1.2. Editor Components 31
      4.1.3. Editor Functionality 32
      4.1.4. Compatibility Requirements for the File Download 32
   4.2. Data Exchange between File-Editor and OS6.0 Window 32
      4.2.1. File Editor → OS6.0 Window 32
      4.2.2. File Editor ← OS6.0 Window 33
5. Appendix 36
   5.1. Literature 36
   5.2. Special Cases 36
   5.3. System Requirements 36
   5.4. Image Directory 37
   5.5. Table Directory 38

1. General

This software manual describes handling and operation of the **OS6.0 Safety** operator software. The document consists of two main parts:

- Chapter 2 (see below) explains the **Safety Mode** in detail
- Chapter 5 „Attachments“ includes additional and supplemental information

1.1 Appropriate Use

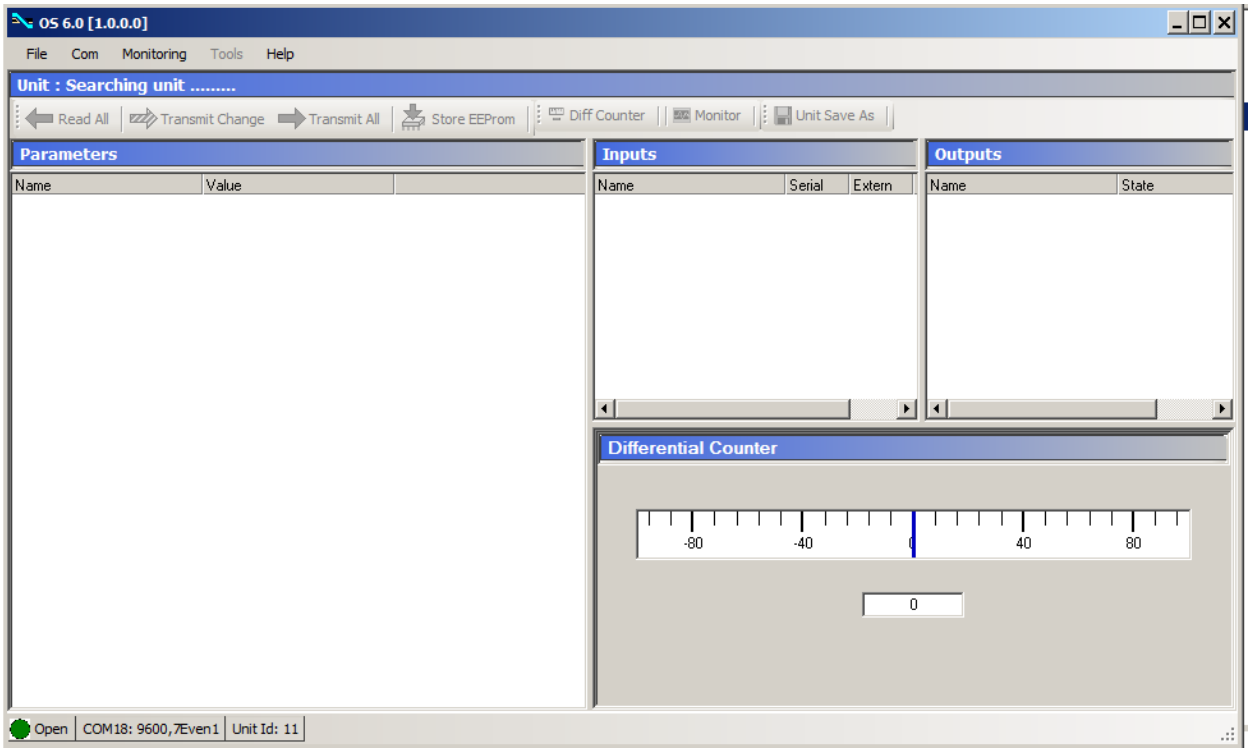
The **OS6.0** operator software described here is suitable for connection, parameterization, operation and simulation of certified safety devices.

All compatible device types will be detected immediately after connecting to a PC with a launched OS6.0 software and provided with the appropriate working environment and all available windows and components.

Please note: The illustrations, screenshot's and various text passages in this software manual are indicated with "**DS230**" as reference, but are also applying to the other DS2xx device versions (e.g. DS236, DS240 and DS246) or devices that could be used with the previous version OS3.2.

2. OS6.0 Overview

The following figure is showing an already started OS6.0 with state „Searching unit…“:



2.1. Safety Mode

The OS6.0 software includes a "Safety Mode" as a different additive component. This is used exclusively for connecting **certified safety devices of the series DS2xx**.

Auto-switch to safety mode: If a safety device is connected, the surface will detect automatically its device type and switchover to the special working environment of the safety component. An active safety mode can be recognized by the yellow colored windows of the working environment (blue color in in standard mode).

2.2. Structure and differences of the Safety Mode

The **OS6.0 "Safety Mode"** screen is similar to the conventional OS6.0 version, but includes five instead of four display elements. If no safety unit is connected, initially the standard OS6.0 opens. Only when connecting a safety unit, the entire safety-version (with all five display elements) is accessible.

A navigation menu as well as a toolbar with buttons allow an easy and intuitive operation of these elements. Not available parts and features are automatically displayed „grayed out".

Overview of all components:

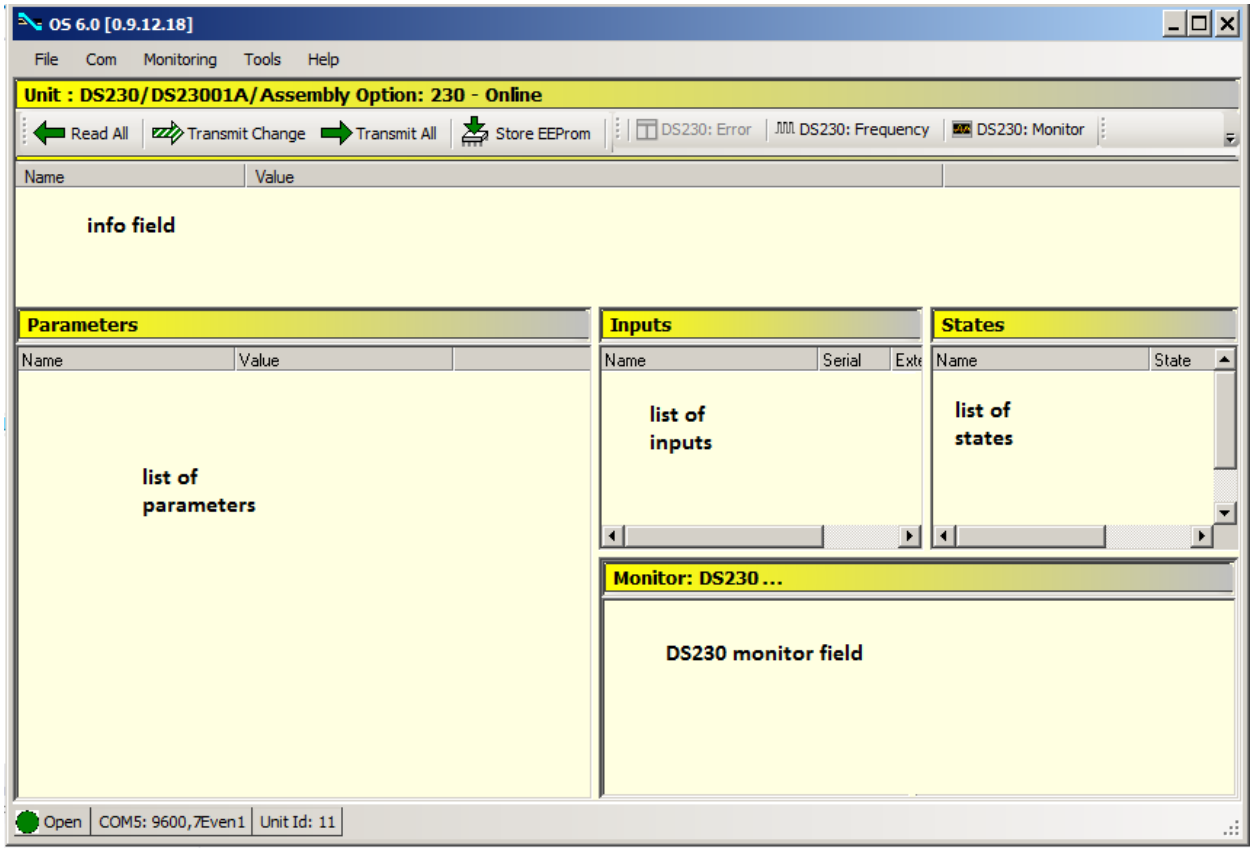


Figure 2-1 Overview „OS6.0 Safety Mode"

The individual elements are described on the following page.

OS6.0 Components:

- Info (see chapter 2.3.1)
  Shows important state information of the connected safety device.
- Parameter (see chapter 2.3.2)
  This component contains a parameter list, which is used to display and change the parameters of the connected unit.
- Inputs (see chapter 2.3.3)
  Serves as pure information display for the respective states of the HTL control and command inputs.
- Status (see chapter 2.3.4)
  Summarizes important information about various safety tests and the setting of the DIL switch.
- Monitor (see chapter 2.3.5)
  A special feature of the Safety Mode is an extended functionality of the monitor component. Three different display windows are available:

  1. DS2xx Error
  2. DS2xx Frequency
  3. DS2xx Monitor

Please note: Fonts and colors can vary depending on the respective Windows settings.

2.3. Safety Components for DS2xx Units

The different components of the Safety Mode interdependent. The chart on the following page is intended to illustrate the respective dependencies.

- The Status component controls the behavior of the OS6.0. This component reads permanently the test results and the DIL switch settings from the connected DS2xx (1), evaluates these values and returns the result in the info field (2).
- At the same time the result of the DIL switch evaluation serves for enabling (or disabling) the parameter entry in the parameter list (3) and to release the data transfer in the editor (4). Data saving of the parameters via editor is always possible (5).
- After enabling the parameter entry, the actual monitor page can be defined for the DS2xx Monitor (6).
- Further the frequency of both connected sensors resp. encoders can be calibrated by using the monitor component DS2xx Frequency (7).
- The components Inputs and DS2xx Errors will complete the chart on the next page.
  Both components do not influence each other. Further they are not influenced by the other three components.

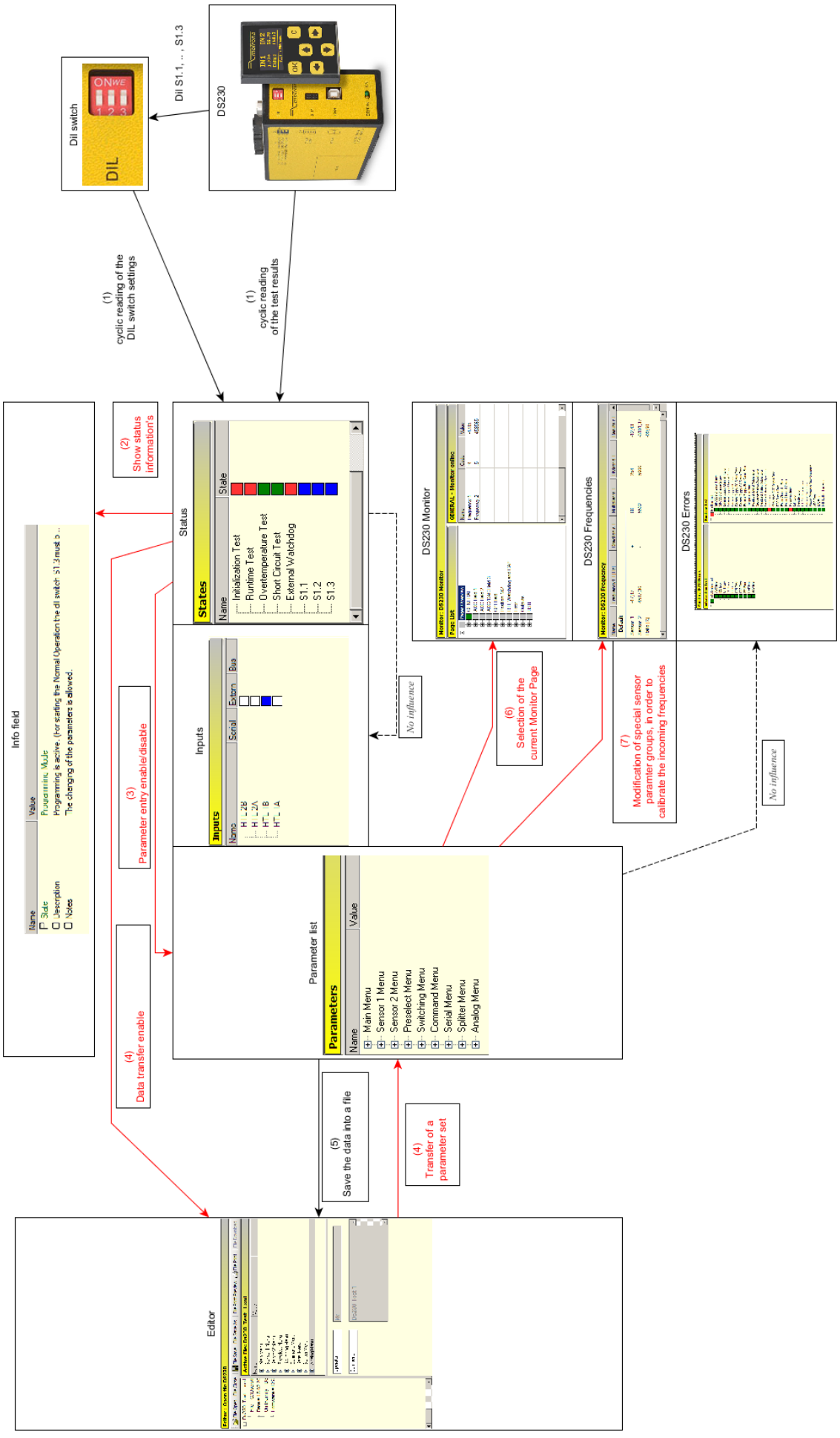


Figure 2-2 Overview „OS6.0 Safety Mode / Dependencies of the different components

2.3.1. Info field

The info field shows the most important status information about the operating conditions of the connected safety unit.

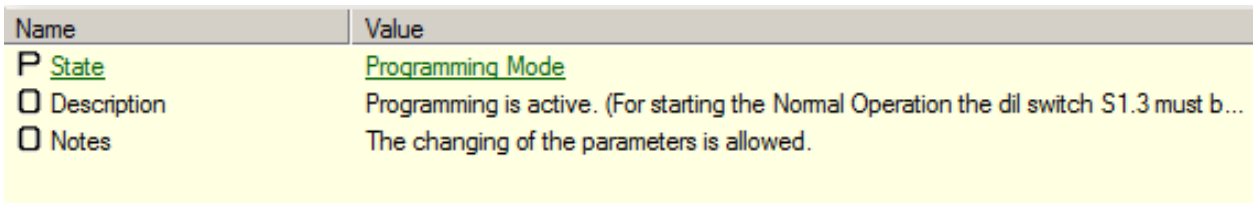


Figure 2-3 Info-Field State „Programming Mode"

More about the exact relationship of the various states and their detailed explanation are described in the actual DS2xx [1] user manual.

Depending on setting of the DIL switch, the safety unit can assume one of the following operating states: **Factory Settings**, **Programming Mode** and **Normal Operation**.

The operating states are recognizable by the info field entrees:

State	Name		Value
Factory Settings	F	State	**Factory Settings** Factory Setting is active.
	O	Description	(For starting the Normal Operation the dil switch S1.1 must be set to on.)
	O	Notes	The changing of the parameters is NOT allowed.
Programming Mode	P	State	**Programming Mode** Programming is active.
	O	Description	(For starting the Normal Operation the dil switch S1.3 must be set to on.)
	O	Notes	The changing of the parameters is allowed.
Normal Operation	R	State	**Normal Operation**
	O	Description	The unit is still working ...
	O	Notes	The changing of the parameters is NOT allowed.

Table 2-1 Info Field / Indication of Operating States

During **Normal Operation** the OS6.0 surface is able to detect and display errors automatically. The table shows a list of possible errors:

Error category	Name	Value
Selftest error	E State	ERROR
	O Description	During the self-test an ERROR has occurred.
	O Notes	The changing of the parameters is NOT allowed.
Operation error	E State	ERROR
	O Description	During an operation an ERROR has occurred.
	O Notes	The changing of the parameters is NOT allowed.
Selftest and operation error	E State	ERROR
	O Description	Both self-test and operations are FAULTY.
	O Notes	The changing of the parameters is NOT allowed.

Table 2-2 Info Field/ Error State Indication

The exact error handling can be found in the actual DS2xx [1] user manual.

2.3.2. Parameter List

The parameter list is used to display resp. change the device parameters.

Device parameter changes are only allowed resp. enabled in the Programming Mode.

With each other state are changings (read from or write to the unit) of parameter sets blocked resp. disabled. The respective component is then grayed out automatically:

Programming Mode:	Factory Settings, Normal Operation:

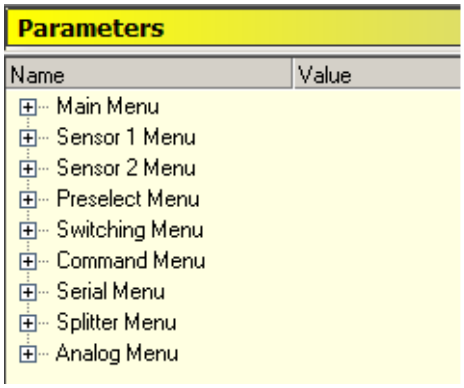
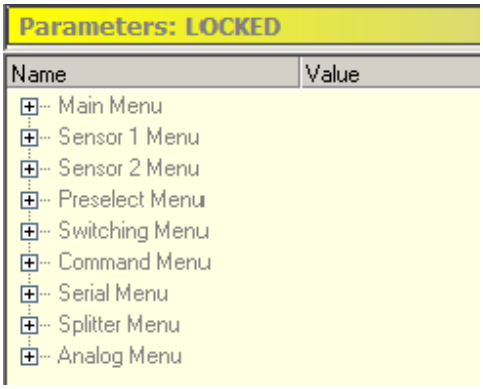

	

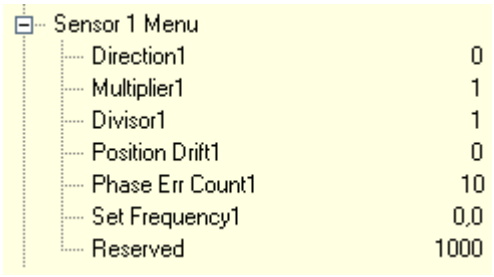
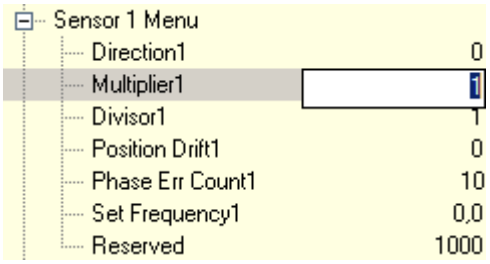
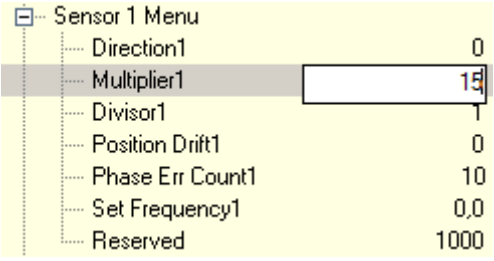
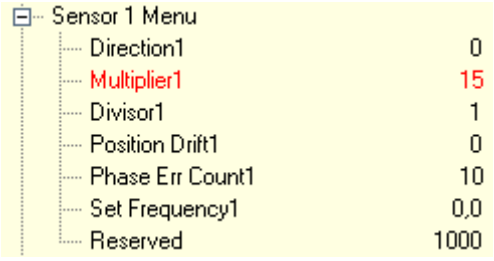
Figure 2-4 Parameter list / Programming Mode	**Figure 2-5** Parameter list „disabled"

The operating states can be defined by using the DIL switch S1 - see DS2xx [1] user manual.

The effects of parameter list enabling/disabling are described in the chapters 4 (Editor Tool) and 2.3.5 (Monitor).

2.3.2.1.Edit Parameter Values

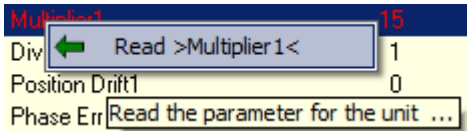
The following example for the parameter **Multiplier1** shows how to edit, read or transmit single parameter values:

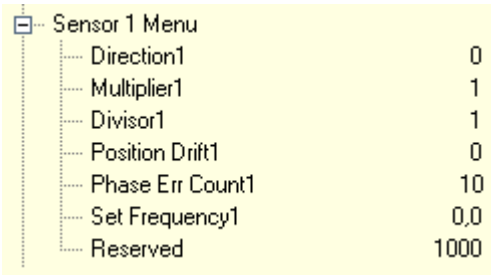
Double-click the parameter value…	
… an editing window opens:	
Now the value can be changed (e. g.15).	
By pressing **Enter**, the changed value is accepted and marked in red, <u>but not</u> transmitted to the unit.	

Please note the exceptions for parameters in the appendix (see chapter 5.2).

2.3.2.2.Read Single Parameters

By using the pop-up menu **Read** a single parameter can be read from the connected unit.





After reading the parameter is automatically marked black.

2.3.2.3.Functions for several parameters simultaneously

For simultaneous reading and transmission of several parameters, the features **Read All**, **Transmit All**, **Transmit Change** und **Store EEProm** can be used. All these functions are activated by the respective buttons in the toolbar.

Before executing these functions, a security check must be agreed, because all these features will have a significant impact on the DS2xx and the OS6.0. If the security check is not approved, the corresponding feature cannot be executed.

2.3.2.4.Read All

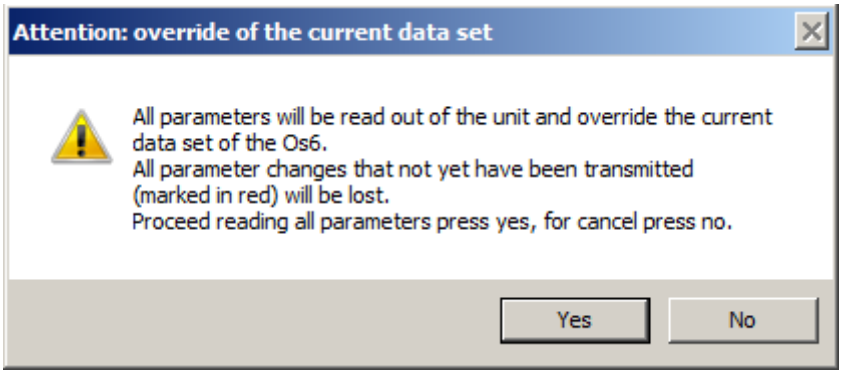
Button	Description
Read All	All parameters of the connected unit will be read and all current parameters overwritten in the parameter list. All parameters will be marked black.
	Security check: 

Table 2-3 Read All

2.3.2.5. Transmit All

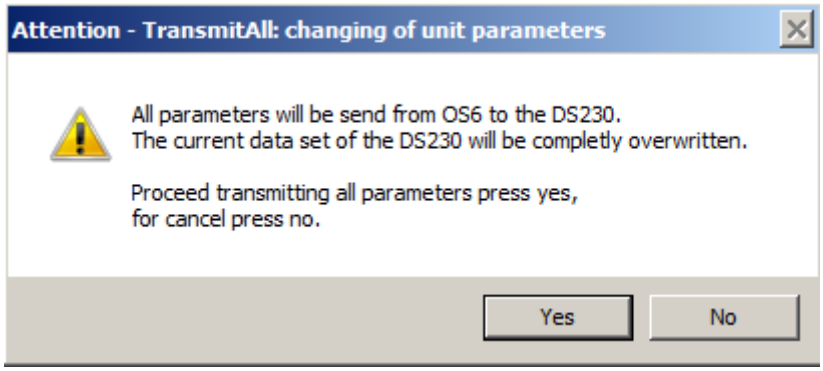
Button	Description
Transmit All	All parameters will be transmitted to the unit and marked orange. Then the transmitted DS2xx parameters will be activated automatically by the OS6.0. After activation, all parameters are automatically read back and compared internally. If they match, the respective parameters are automatically marked green.
	Security check: 

Table 2-4 Transmit All

2.3.2.6. Transmit Change

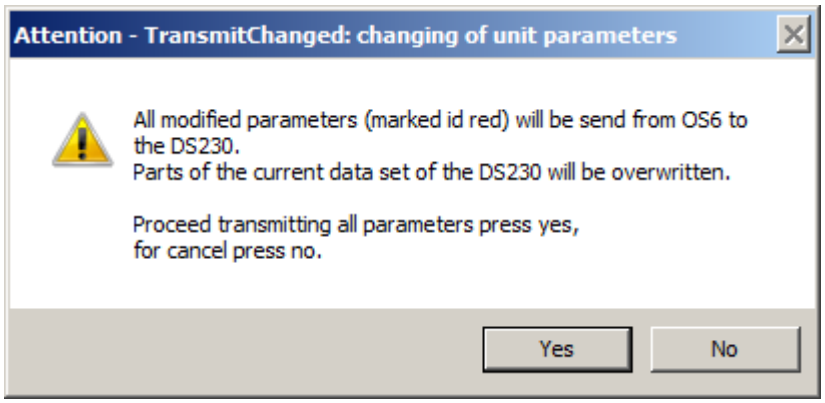
Button	Description
Transmit Change	Only the changed (red marked) parameters are transmitted to the unit. Apart from this, the actions **Transmit Changed** and **Transmit All** are identical.
	Security check: 

Table 2-5 Transmit Change

2.3.2.7.Store EEProm

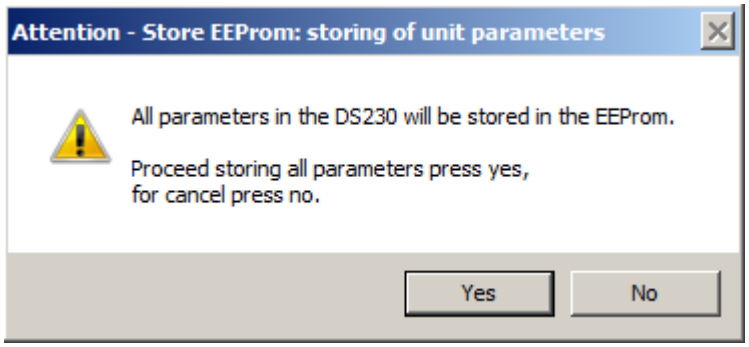
Button	Description
Store EEProm	Save all parameters to the EEPROM. This type of storage has no influence on the parameter colors in the parameter list.
	Security check: 

Table 2-6 Save Parameters to the EEProm

2.3.2.8.Save Parameters as File

Button	Description
Unit Save As	By pressing the button Unit Save as, the file editor is displayed on the left side of the screen and the actual parameter set can be saved as a file.

Table 2-7 Save Parameters as File

2.3.3. Inputs

The **Inputs** field is used purely as an information display, which shows the present switching states of the HTL control inputs at terminal **X10** of the DS2xx unit.

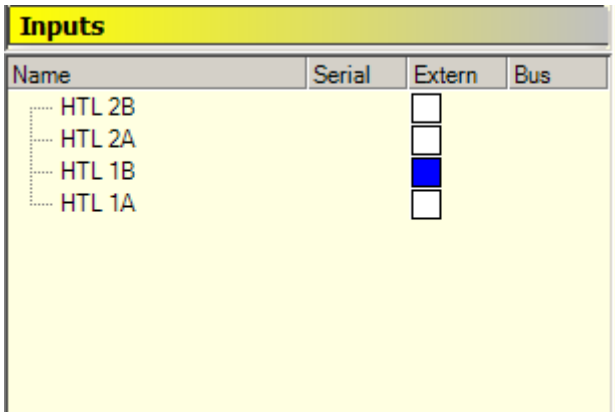


Figure 2-6 Input Component

Extern	Notice
■	Input is **HIGH**
□	Input is **LOW**

Table 2-8 Input Component/ Input States

A description of the inputs can be found in the actual DS2xx [1] user manual.

2.3.4. States

The states component is divided into the both columns **Name** and **State**. The individual entries of are arranged in rows.

These entries are divided into two areas. The first five entries are test results, which provide information about the status of the connected unit.

The three entries in the screenshot below show the respective switching states of the DIL switch (S1.1, S1.2, S1.3):

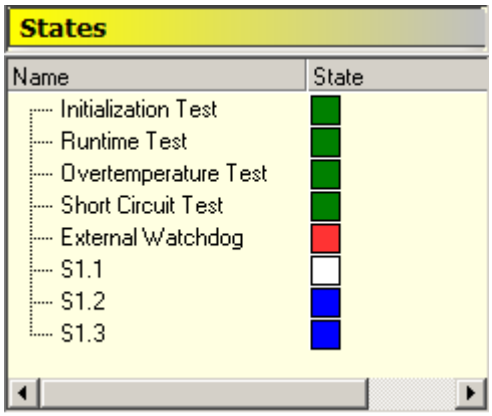


Figure 2-7 Status Component

The table below shows the possible states of the respective entries:

Entry	State	Notice
Test result		The test was NOT successful.
		The test has been completed successfully.
DIL switch		The state of the DIL switch slider is ON.
		The state of the DIL switch slider is OFF.

Table 2-9 Status Component / Entry States

More information about the entries can be found in the actual DS2xx [1] user manual.

2.3.5. Monitor

With its three monitor windows (**DS2xx Errors**, **DS2xx Frequency** and **DS2xx Monitor**) Safety Mode offers extensive monitoring possibilities for the DS2xx.

Only one of these monitor windows can be active at one time. The selection of the respective display element can be done via the navigation menu **Monitoring** or by using the corresponding **Button** of the toolbar.

List of available display elements:

Display element	Selection by *Menu*	*Button*
DS2xx Errors	DS230: Errors	DS230: Error
DS2xx Frequency	DS230: Frequency	DS230: Frequency
DS2xx Monitor	DS230: Monitor	DS230: Monitor

Table 2-10 Monitor / Display Element for Monitor Selection

2.3.5.1.DS2xx Errors

This monitor shows a detailed itemization of the several error indicators:

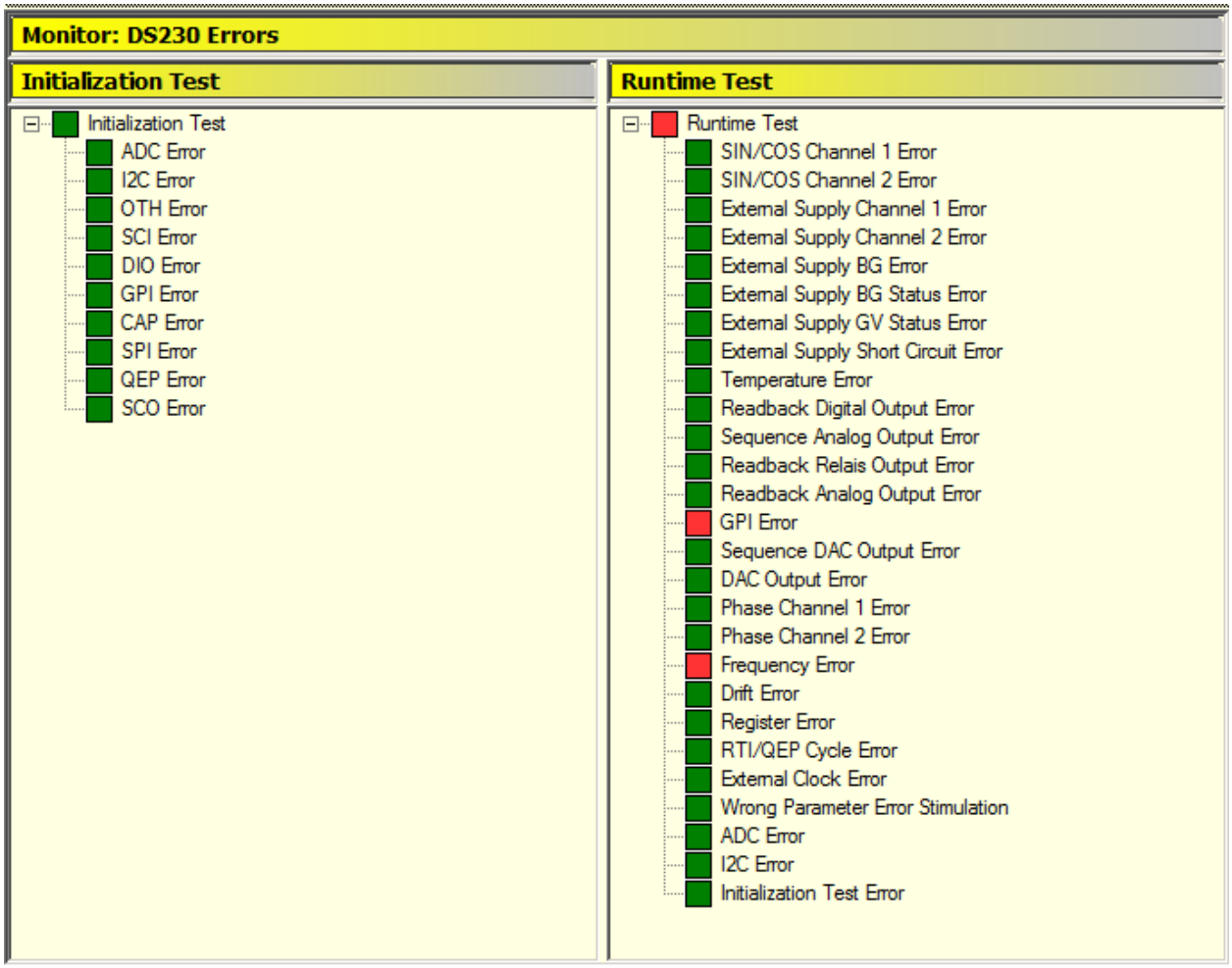


Figure 2-8 Monitor / DS2xx Errors

The itemization is divided into two groups: **Initialization Test** (left) and **Runtime Test** (right).

The **Initialization Test** shows all indicators which are checked once when startup resp. booting the safety unit. The **Runtime Test** shows all indicators which are cyclically checked each time after starting resp. booting the unit.

The error identification is shown in the following table.

Display	Description
	Indicator reports an error
	No error occurred

Table 2-11 Monitor / DS2xx Errors – Error Identification

More information about the several indicators can be found in the actual DS2xx [1] user manual.

2.3.5.2.DS2xx Frequency

This monitor is mainly used as calibration-tool for the sensors connected to the unit. All calibration-related data resp. results are summarized in two groups (**Measurement** and **Result**):

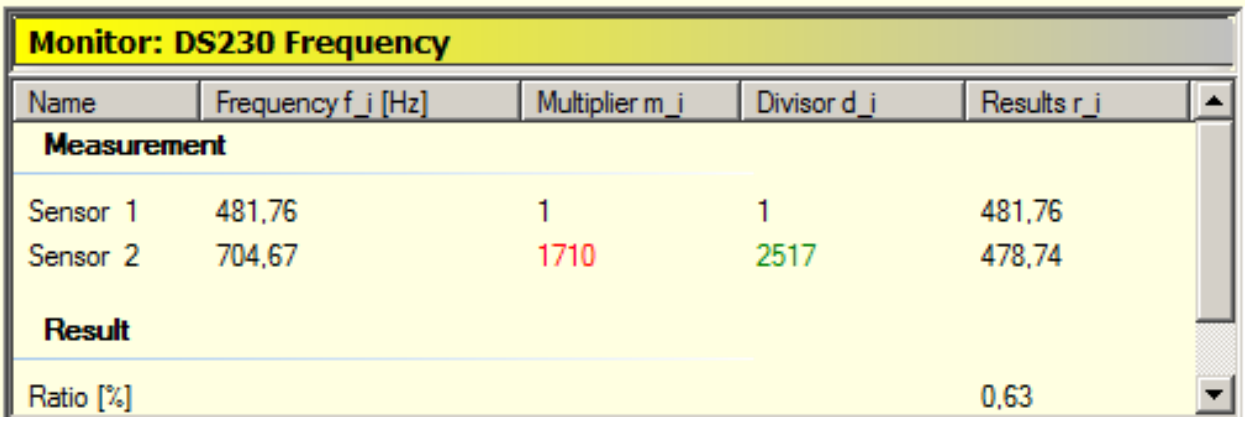


Figure 2-9 Monitor / DS2xx Frequency

The **Measurement** group displays all important information for both connected sensors. The current frequencies of both sensors are read cyclically from the DS2xx. The corresponding column of this component is automatically updated with these values.

The **Result** group will show the result of the calibration.

1.1.1.1.1 Frequency Calibration via OS6.0

The frequencies can be calibrated directly in the parameter list of the DS2xx unit:

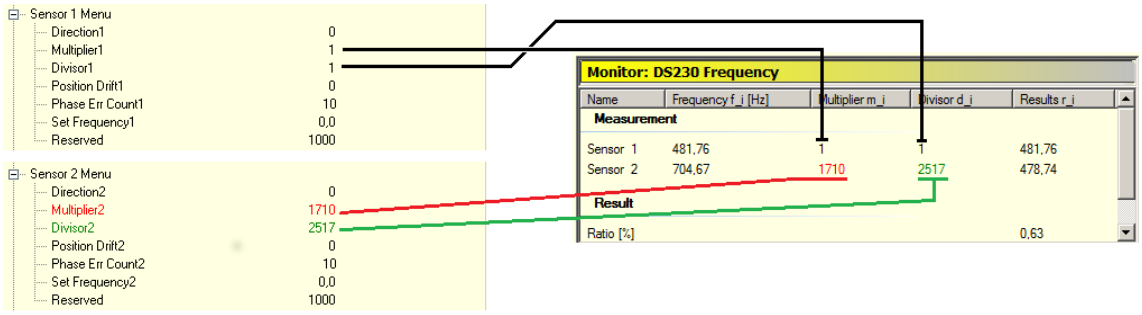


Figure 2-10 Monitor / DS2xx Frequency Calibration

- **This calibration is only in the Programming Mode accessible.**
- **Please go to the chapter 2.3.2 to learn more about the different colors and parameter values.**

Values and colors of the respective parameters are automatically transferred from the parameter list to the **DS2xx Frequency** monitor component.

With each change, the result of the calibration will be calculated automatically and entered in the corresponding column of the result group.

A calibration only makes sense if the measured frequencies for both sensors are higher than zero. In all other cases a warning information appears (see table):

Display Ratio [%]	Meaning	Notice
Indication of the relative deviation in a range of [-100 % ;100 %]	Both frequencies are higher than zero	Calibration possible
F1 are zero	The measured frequency of sensor 1 is zero.	Sensor 1 standstill or not connected. ⇨ No calibration possible
F2 are zero	The measured frequency of sensor 2 is zero.	Sensor 2 standstill or not connected. ⇨ No calibration possible
F1 and F2 are zero	Both measured frequencies are zero.	Both sensors standstill or not connected. ⇨ No calibration possible

Table 2-12 Monitor / DS2xx Frequency - Calibration Conditions

More about the calibration procedure can be found in the actual DS2xx [1] user manual.

2.3.5.3.DS2xx Monitor

This feature provides an easy way to monitor the state of the DS2xx. An exact description of several monitor parameters and its arrangement can be found in the actual DS2xx [1] user manual.

1.1.1.1.2 Overview

The DS2xx Monitor shows two columns: **Page List** (left) and **Monitor** (right)

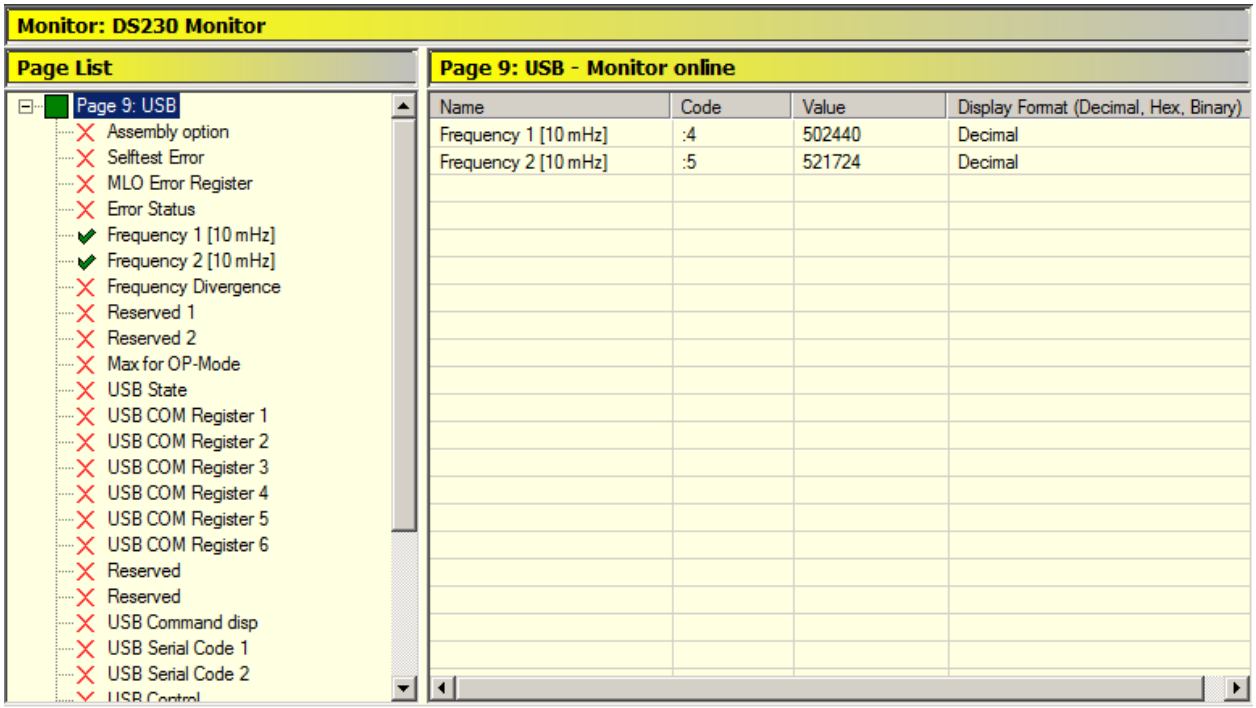


Figure 2-11 Monitor / DS2xx Monitor - Overview

Page List is used to display the selected parameter page resp. the data set. Further single or several monitor parameters which should be checked can be (de-)selected in the **Page List**. According to the respective selection, these parameters are automatically shown in the **Monitor** field.

The **DS2xx Monitor** offers the following processing and display modes:

Modus	Name	Used for….
1.Display Mode	**Monitor Offline**	… displaying the selected parameter page. After starting the DS2xx Monitor the monitor opens in this mode.
2. Monitor Mode	**Monitor Online**	… cyclic reading and displaying of selected parameters.
3. Editor Mode	**Editing Mode**	…(de-)selection of single or several monitor parameters für the monitoring mode.

Table 2-13 Overview / DS2xx Monitor

The handling of the **DS2xx Monitor** is very easy and can be done by using a pop-up menu or by the control buttons (as shown in the following figure):

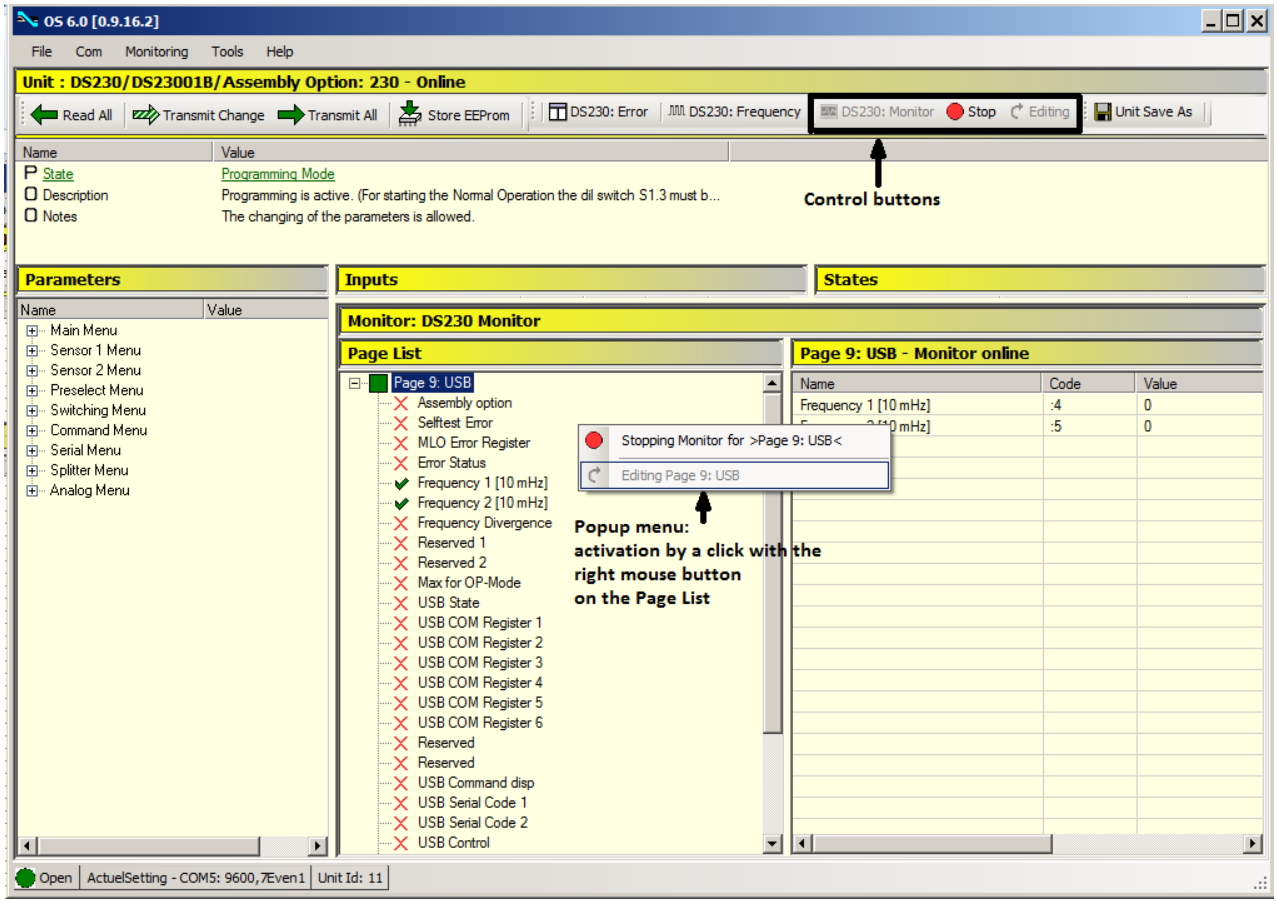


Figure 2-12 Monitor / DS2xx Monitor / Popup-Menu and Control Buttons

1.1.1.1.3 Selection of the Parameter Set

To select a respective parameter set, the parameter **Serial Page** from the **Serial Menu** in the parameter list is used:

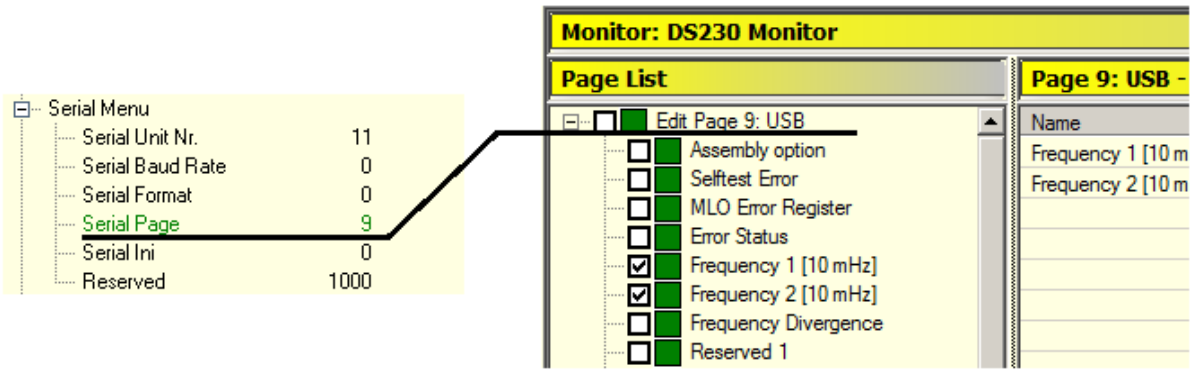


Figure 2-13 Monitor / DS2xx Monitor / Page Selection by Parameter

The page changes automatically after a successful transfer of the **Serial Page** parameter (see above) or after reading this parameter from the connected DS2xx unit. After page changing the display mode always switches into the **Monitor Offline** state.

1.1.1.1.4 Display Mode: Monitor Offline

Monitor Offline is a pure display mode, which indicates the current selected data set or the parameters, which are selected for monitoring. It is possible to change from this mode to both other modes.

Page List

The **Page List** (left column) displays automatically the data set, that is selected by the **Serial Page** parameter. The following figure shows an example of the data set „Page 9: USB".

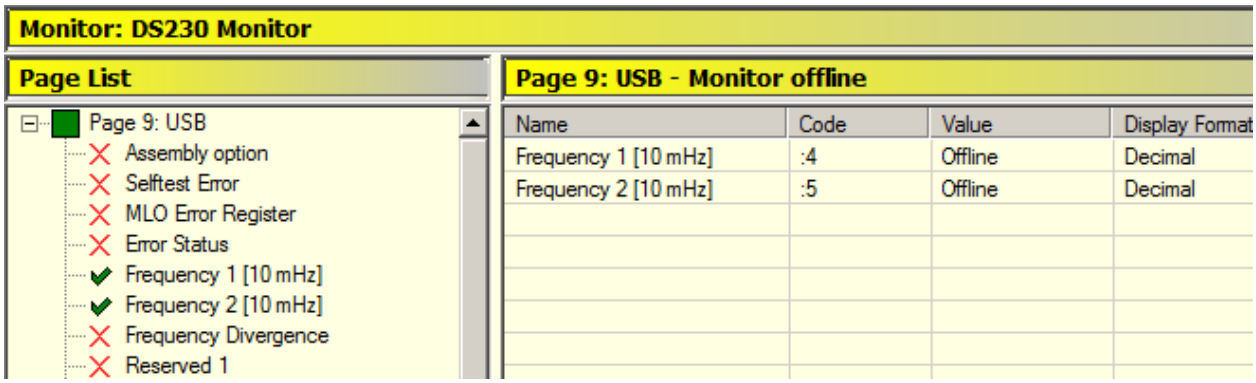


Figure 2-14 Page List / DS2xx Monitor / Monitor Offline

All parameters that should be monitored by the Monitor are marked with an ✔ icon.
All other parameters are marked with an ✕ icon.

Monitor Field

The **Monitor field** (right column) contains all parameters which should be monitored. The example above shows the parameters „Frequency 1 [10 mHz]" und „Frequency 2 [10 mHz]".

The Monitor field is based on four-columns:

1. Name	2. Code	3. Value	4. Display Format
Name of the parameter	Code of the parameter	To identify the Monitor Offline state always "Offline" is entered.	Not relevant for this mode.

Table 2-14 Monitor Field / Columns

Switching to the other Modes

To change into another mode either the popup menu of the **Page List** or the toolbar buttons can be used. The table shows a list of available selection items:

Mode	Selection by	
	Popup-Menu	*Control-Button*
Monitoring Mode: **Monitor Online**	Starting Monitor for Page 9: USB	Start
Editor Mode: **Editing Mode**	Editing Page 9: USB	Editing

Table 2-15 Monitor Field / Switching to the other Modes

1.1.1.1.5 Monitoring Mode: Monitor Online

This is the mode for the actual monitoring

Page List

The **Page List** (see below) is only used for displaying the parameter of the current page:

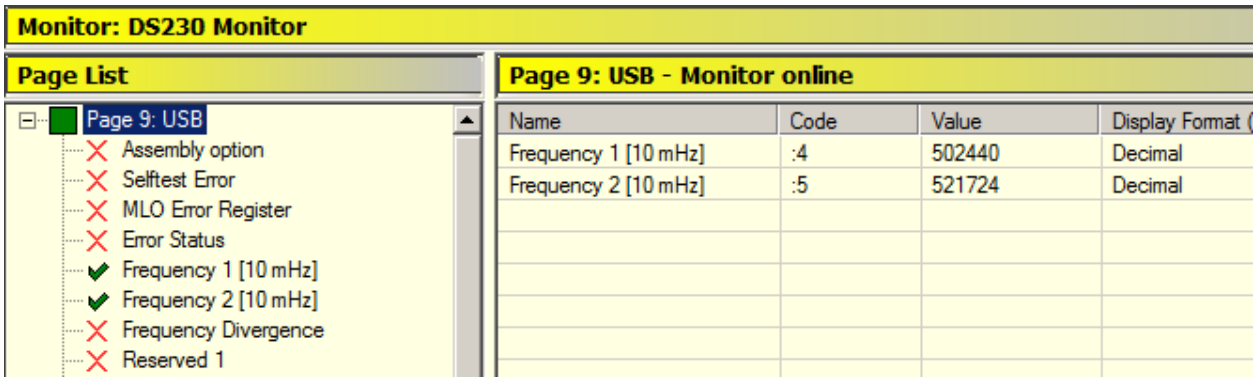


Figure 2-15 Monitor / DS2xx Monitor / Monitor Online

Monitor Field

All parameters entered in that list are cyclically read by the DS2xx unit and displayed in the **Value** column. The example above shows the parameters „Frequency 1 [10 mHz]“ and „Frequency 2 [10 mHz]“.

For each parameter an individual display format can be preselected (see table):

Column	Meaning
Name	Name of the parameter
Code	Code of the parameter
Value	Indicates the currently read parameter value
Display Format	Current display format in the *Monitor Online mode*. Three different formats are available: **Format Name** / **Meaning** **Decimal** – Decimal display (standard) **Hex** – 8-digit hexadecimal display **Binary** – 32-digit binary display The format can be changed by clicking on the corresponding parameter line.

Table 2-16 Monitor Field / Display Formats

Switching to the other Modes

This mode only allows to change into the **Monitor Offline** display mode. For switchover either the popup menu of the **Page List** or the toolbar buttons can be used. The table shows a list of available selection items:

Mode	Selection by *Menu*	*Button*
Display Mode **Monitor Offline**	Stopping Monitor for >Page 9: USB<	Stop

Table 2-17 Switching to „Monitor Offline“

2.3.5.4.Editor-Modus: Editing Mode

Is used to select the parameters to be monitored.

1.1.1.1.6 Page List

The left column **Page List** is used to check or uncheck the desired parameters. Checked parameters are marked by an activated checkbox ☑. Further these parameters are entered in the **Monitor Field** (see right column). Unchecked parameters are marked by a not activated ☐ checkbox.

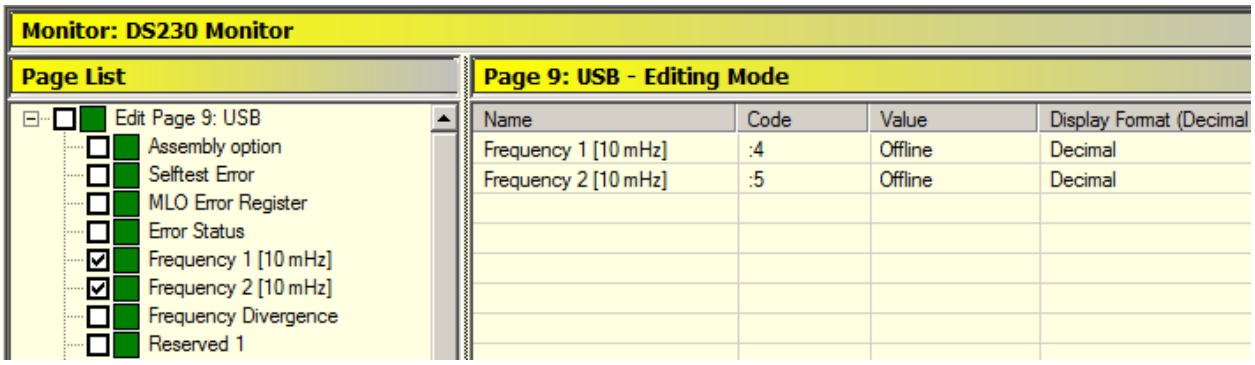


Figure 2-16 Page List / DS2xx Monitor / Editing Mode

The parameter selection or deselection is done by simply clicking the checkbox of each parameter name. The **Monitor Field** is automatically updated accordingly.

1.1.1.1.7 Monitor Field

Only the selected parameters are displayed in the **Monitor Field**. The available columns and meanings are shown below:

Column	Meaning
Name	Name of the parameter
Code	Code of the parameter
Value	To identify the **Editing Mode** state, always „Offline“ is entered.
Display Format	Not relevant for this mode.

Table 2-18 Monitor Field / Meanings

1.1.1.1.8 Switching to the other Modes

This mode only allows to change into the **Monitor Offline** display mode. For switchover either the popup menu of the **Page List** or the toolbar buttons can be used. Two different types of switchover are available, either with or without a backup of the selected parameters. The following table shows a list of both available types:

Name	Switchover	Description
Close	Menu: Closing the editing of >Page 9: USB< Button: Close	Switches to the **Monitor Offline** display mode, WITHOUT backup.
Save and Close	Menu: Save and close editor Button: Save and close	Saves the changes into a config-file and switches to the **Monitor Offline** display mode

Table 2-19 Mode Switchover

2.3.6. Exception: Lost Connection …

In case of an interrupted connection between the OS6.0 safety and the DS2xx unit, the following message appears:

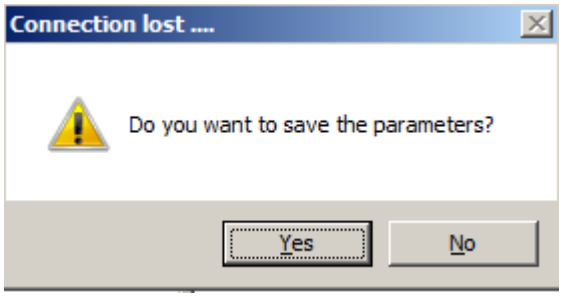


Figure 2-17 "Lost Connection" Warning

Two options are then available to the user :

Button	Action
click **Yes**:	All data can be saved as a fil by using the File Editor tool. **This is the last chance to save the data!**
click **No**:	The data will not be saved.

Table 2-20 Options in Case of a Lost Connection

Regardless of the selection above, all data will be deleted from the OS6.0.

The OS6.0 surface cannot differentiate between a lost connection and a broken COM port. Therefore, both states are treated equally.

3. Serial Configuration

The configuration tool of the serial interface is accessed via the **Show com port settings** menu or alternatively by using the keyboard shortcut Ctrl + K (see Fig. Below).

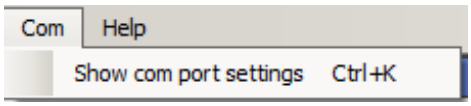


Figure 3-1 Start Menu for Serial Configuration

Depending on whether a DS2xx, any compatible device or no device is connected, the configuration tool appears in different background-designs:

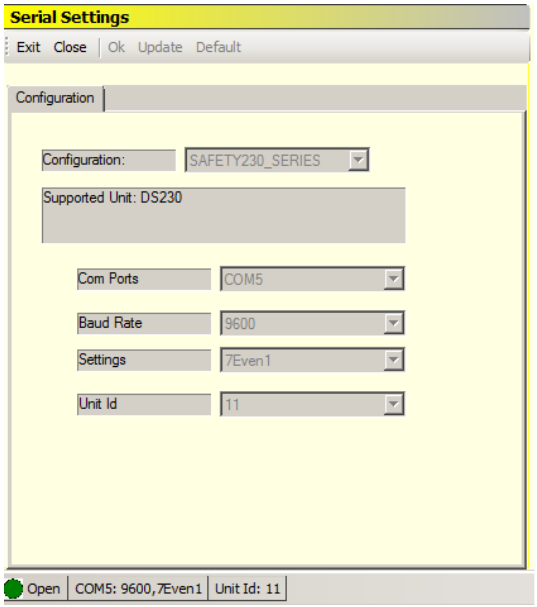


Figure 3-2 Serial DS2xx Configuration

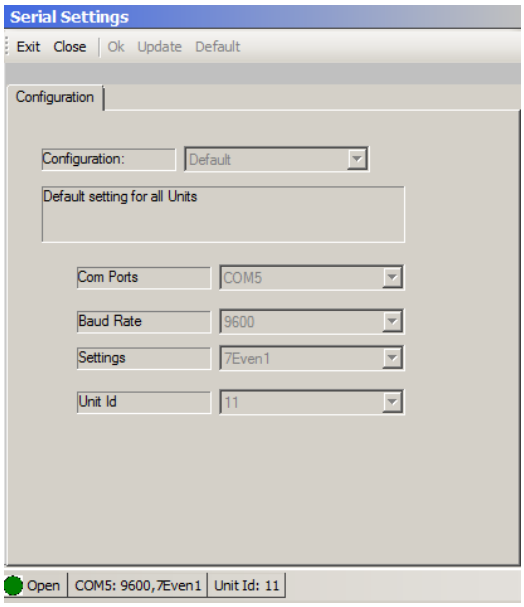


Figure 3-3 Serial Configuration for Standard Units

This manual describes only the serial configuration for the DS2xx unit.

3.1.1. Overview

Structure of the configuration tool:

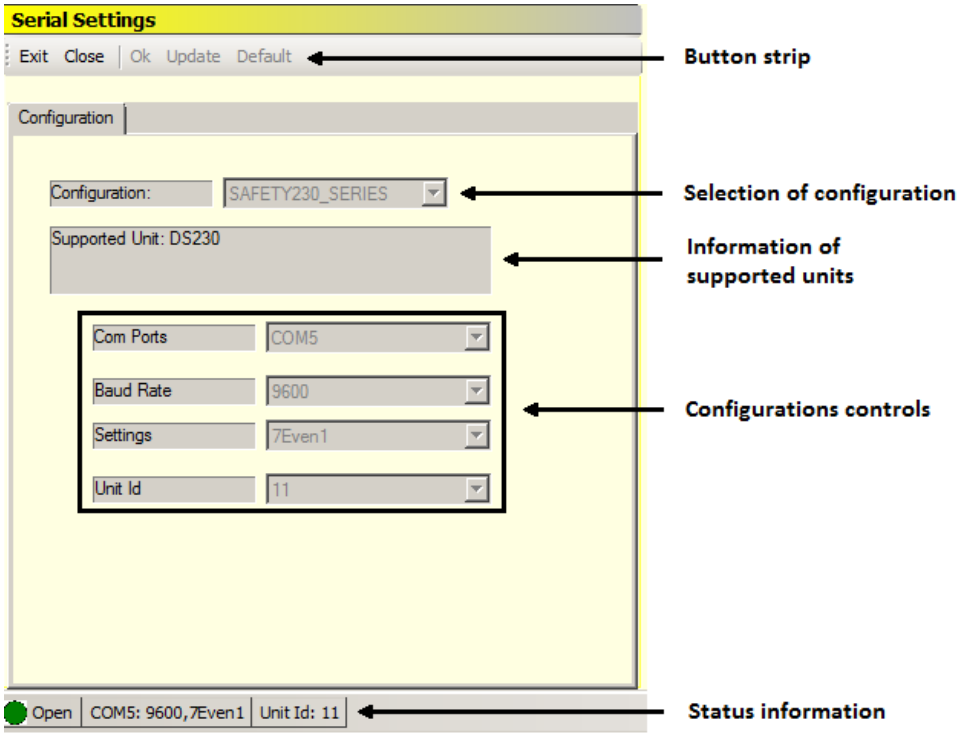


Figure 3-4 Overview / Serial Configuration Tool

For general operation a button bar or a control menu available:

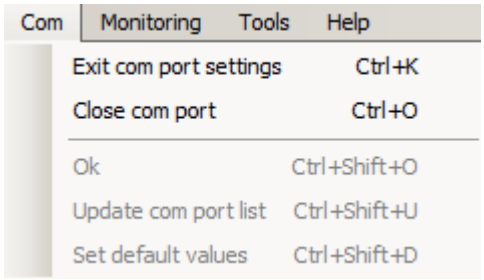


Figure 3-5 Operation Menu

The configuration selection allows to change between different settings. The respective selected configuration of supported units is displayed in the information box below the configuration-selection.

The four items **Com Ports**, **Baud Rate**, **Settings** and **UnitId** are used to select resp. set the COM-Port or unit number.

3.1.2. General Operating Elements

The basic control elements to exit the configuration window and for opening or closing the COM ports are:

Button	Menu	Notices
Exit	Exit com port settings Ctrl+K	Exit the configuration window **without** changes in the settings
Open	Open com port Ctrl+O	Open the current COM port with **Deactivation** of "Ok", "Update" and "Default".
Close	Close com port Ctrl+O	Close the current COM port with **Activation** of "Ok", "Update" and "Default".

Table 3-1 General Operating Elements

Dependent from the actual COM-Port state (open or closed) one of the following both variants is shown:

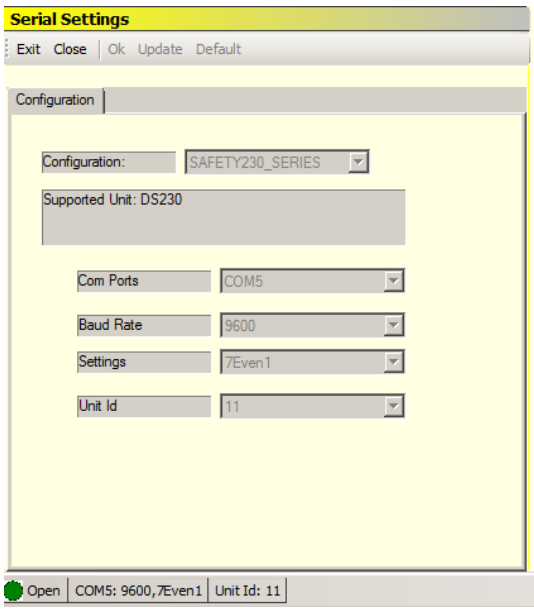


Figure 3-6 COM-Port is open

Changes in the settings are **disabled**

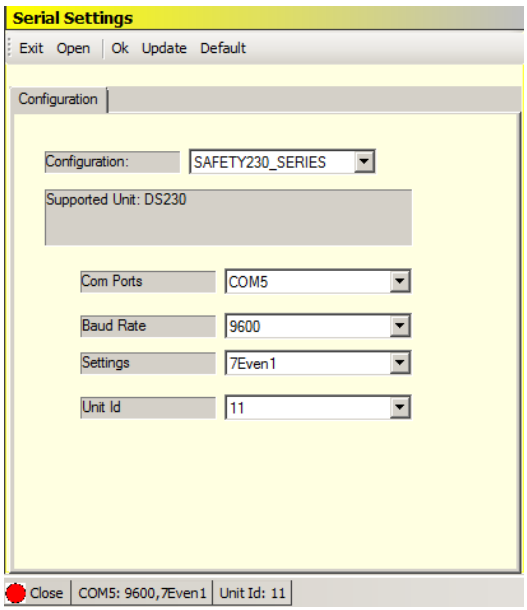


Figure 3-7 COM-Port is closed

Changes in the settings are **enabled**

If a unit is connected, the closing of the COM port will result in a lost connection.
A warning "Connection lost…" appears (see chapter 2.3.6).

If the COM port is closed additional features are available:

Buttons	Menu	Notices
Ok	Ok Ctrl+Shift+O	**Transfers** the edited COM port settings and closes the configuration window automatically. After closing, the OS6.0 immediately tries to connect a device.
Update	Update com port list Ctrl+Shift+U	**Actualizes** the COM port list. In case of a new available COM port at the PC, the list can be actualized by clicking the "Update" button.
Default	Set default values Ctrl+Shift+D	**Resets** baud rate, settings and unit number back to the factory settings.

Table 3-2 Operating Elements / Additional Features in case of a closed COM port

3.1.3. Configuration Selection

Temporarily two configurations are accessible:

#	Name	Units	Baud Rate	Settings
1	Default	Default	9600,4800,2400, 1200,600,19200,38400	7Even1,7Even2, 7Odd1,7Odd2, 7None1,7None2, 8Even1,8Odd1, 8None1,8None2
2	SAFETY230_SERIES	DS2xx	9600,4800,2400, 1200,600,19200,38400, 56000,57200, 76800,115200	7Even1,7Even2, 7Odd1,7Odd2, 7None1,7None2, 8Even1,8Odd1, 8None1,8None2

Table 3-3 Configuration Selection

If a device is detected at the serial port, the matching configuration is selected automatically and further entered into the corresponding operating elements

Notice: The DS2xx unit has an extended baud rate range.

3.1.4. Operating Elements

The serial COM port selection as well as its settings are done by the operating elements **Com-Port**, **Baud Rate** and **Settings**. Additionally the **Unit Id** item allows to assign a unit number to the connected device (see table below):

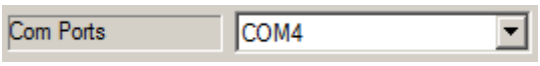
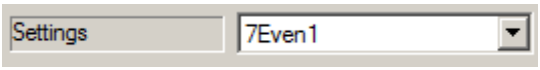
Configuration Tools	Notices
	List of all connected (and activated). COM Ports (COM1, COM4, etc.)
	List of all adjustable baud rates. Default setting: 9600
	List of all usable serial adjustments. Default setting: 7Even1
	List of all available unit numbers. Default setting: 11

Table 3-4 Operating Elements / Configuration Tools

3.1.5. Status Information

All important information about the COM Port are indicated in the status bar (see figure):

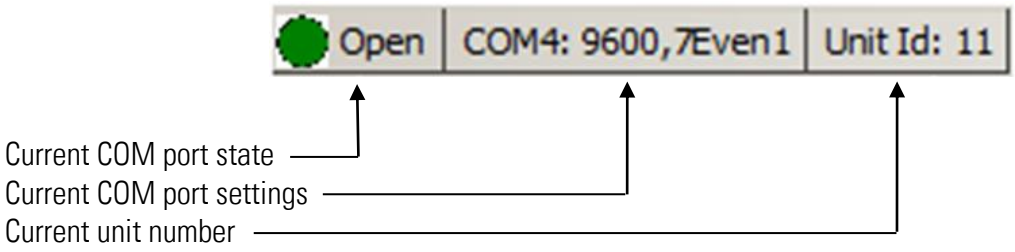


Figure 3-8 Status Bar / COM Port Information

The table below shows the different state variants:

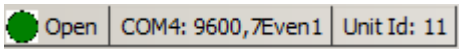
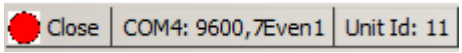
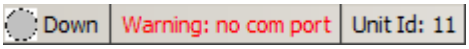
COM Port State	Status Bar Info	Notices
COM port is open		
COM port is closed		
No COM port available	 (message flashes)	A COM port must be installed

Table 3-5 Status Information / Status Variants

4. Editor Tool for Parameter Files

The **File Editor** is a helpful tool, which allows to edit and save parameter files quickly and easily. It can be used selectively as a „stand alone“ editor (without a connected unit) or in combination with a unit which is connected by the COM port.

The editor is located on the left half of the screen. The right half shows an OS6.0 window:

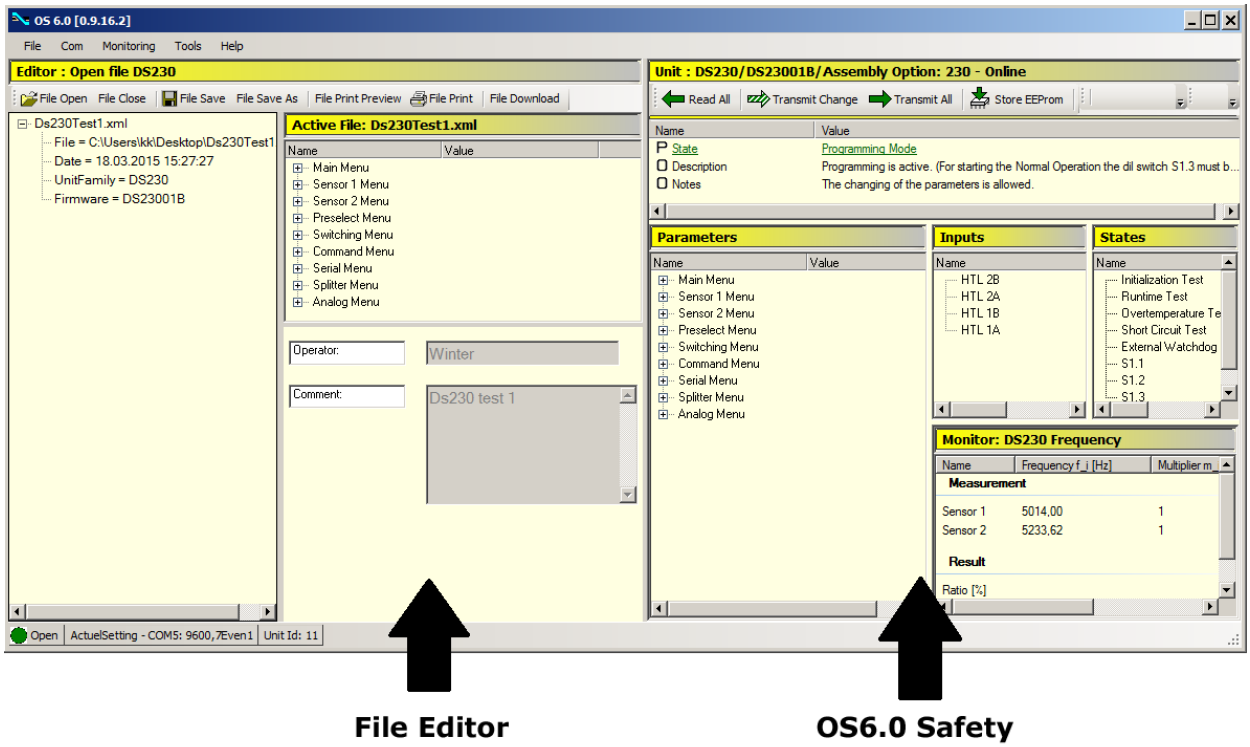


Figure 4-1 File Editor

The editor uses the nowadays common **.xml** format for reading and writing. The former, classic .par format can also be opened.

4.1.1. Opening the Editor

Stand alone	To start as “stand alone” editor, the menu **File -> Open Editor** is used. An **Open file** dialog appears. As source, the current working directory or the last saved directory can be used.
Combined	In combination with a connected unit, the button **Unit Save as** is used to open the editor. The editor can also be started with a “Connection lost ...” state.

Table 4-1 Opening the Editor

4.1.2. Editor Components

The structure of the editor is very simple (see figure below):

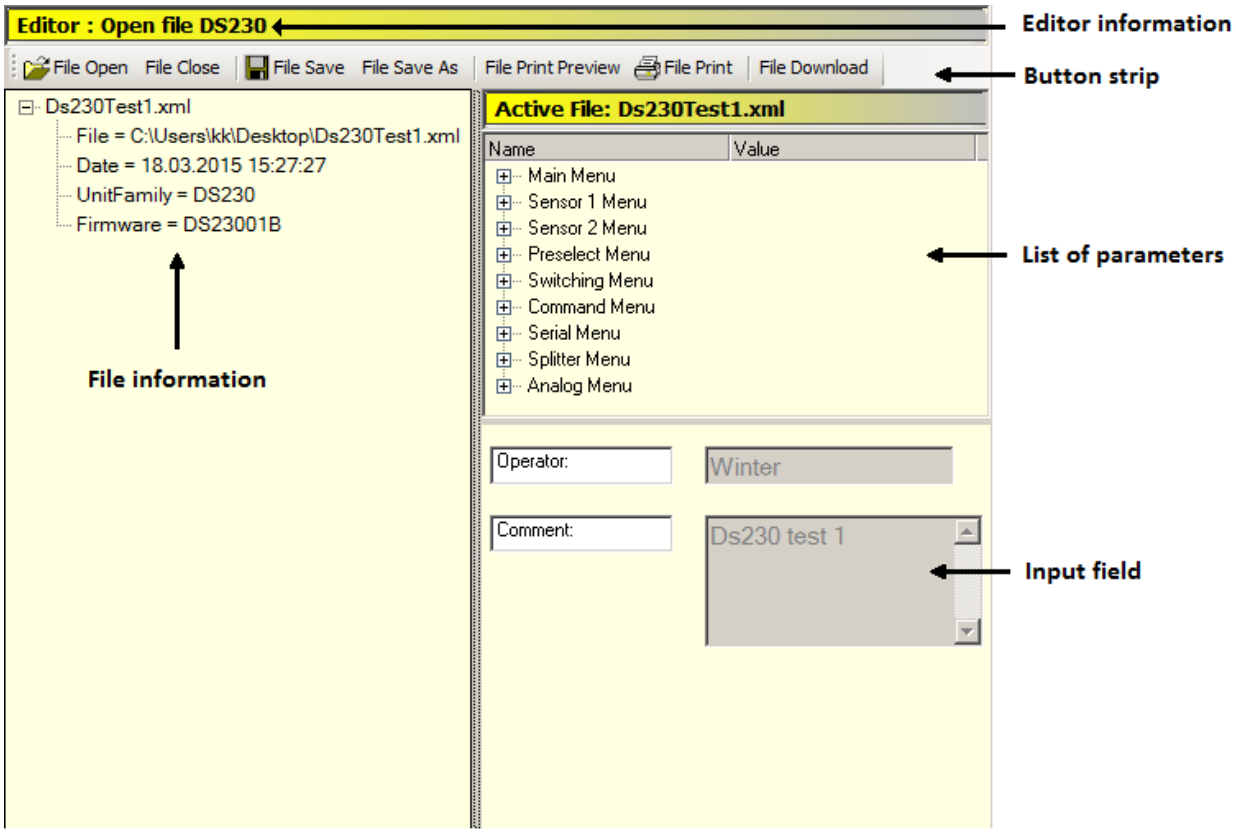


Figure 4-2 Editor Components with a loaded Parameter File

The functions of the different components are described in the following table:

Component	Description
Editor information	Shows short and important information.
Button strip	List of all available buttons which are used by the editor.
File information	Shows the most important information about the current loaded file.
List of parameters	Displays all parameters in the same way as the OS6.0 safety surface. Each parameter can be edited after double-clicking the respective parameter value.
Input field	Field for user entries. Is used during the save process.

Table 4-2 Editor / Description of the Components

4.1.3. Editor Functionality

Function	Description	Supplemental Notices
File Open	Opens a new data file. The software is able to proceed the former .par as well as the newer **.xml** format. The selection is made via file extension.	Overwrites the currently opened file in the editor.
File Close	Closes the file and editor.	No saving of the current file.
File Save	Saves to the actual target directory.	
File Save As	Saves the current file with a new file-name into a new target directory.	A user name entry and a comment about the file can be left here.
File Print Preview	Creates a preview of the currently opened file.	Only usable with an installed printer!
Print	The opened file will be printed out.	Only usable with an installed printer!
File Download (see also 2.4.4)	Copies the actual file into the OS6.0 window in order to transmit it to the connected unit.	Only usable with a connected target unit. The editor-file has to be compatible with the parameter data of the target unit.

Table 4-3 Functionality of the Editor

4.1.4. Compatibility Requirements for the File Download

In order to ensure the compatibility between editor and a loaded parameter-set of a connected target unit, the following requirements must be fulfilled:

- ✓ Operating state DS2xx:
  The connected DS2xx unit must run in the **Programming Mode**
  (see also chapter 2.3.1 „Info field").
- ✓ Unit family:
  The first five characters of the unit family and the loaded parameter-set must be identically. The characters are not case-sensitive.
- ✓ Firmware:
  a.) Standard Firmware:
  The first seven characters of the firmware and the loaded parameter-set must be identically. The characters are not case-sensitive.
- ✓ b.) Special Firmware:
  All characters of the firmware, editor file and loaded parameter-set must be identically.

4.2. Data Exchange between File-Editor and OS6.0 Window

4.2.1. File Editor → OS6.0 Window

In case of unfulfilled compatibility requirements the **File-Download** button is grayed-out automatically (see example below):

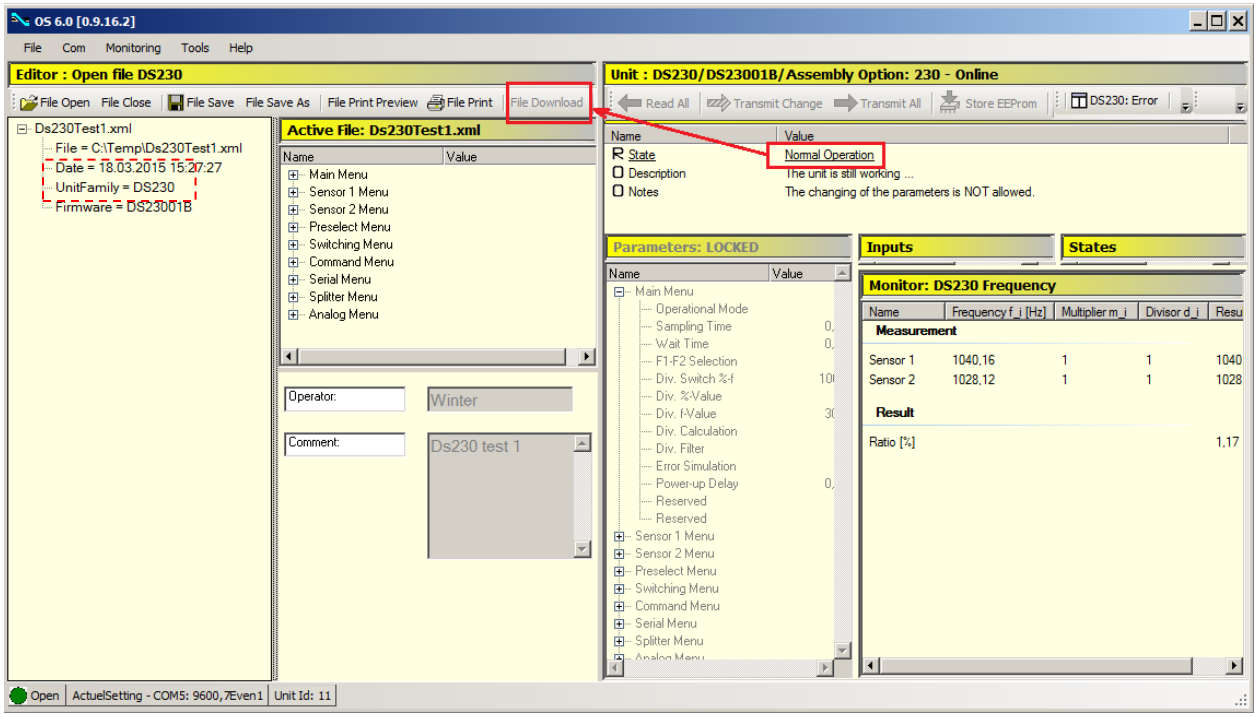


Figure 4-3 Example "DS2xx unit is not in the Programming Mode"

In case of fulfilled compatibility requirements, all editor parameters will be transmitted to the OS6.0 window, as soon the **Download File** button is pressed. The parameters of the OS6.0 window will then be completely overwritten and automatically highlighted in red.

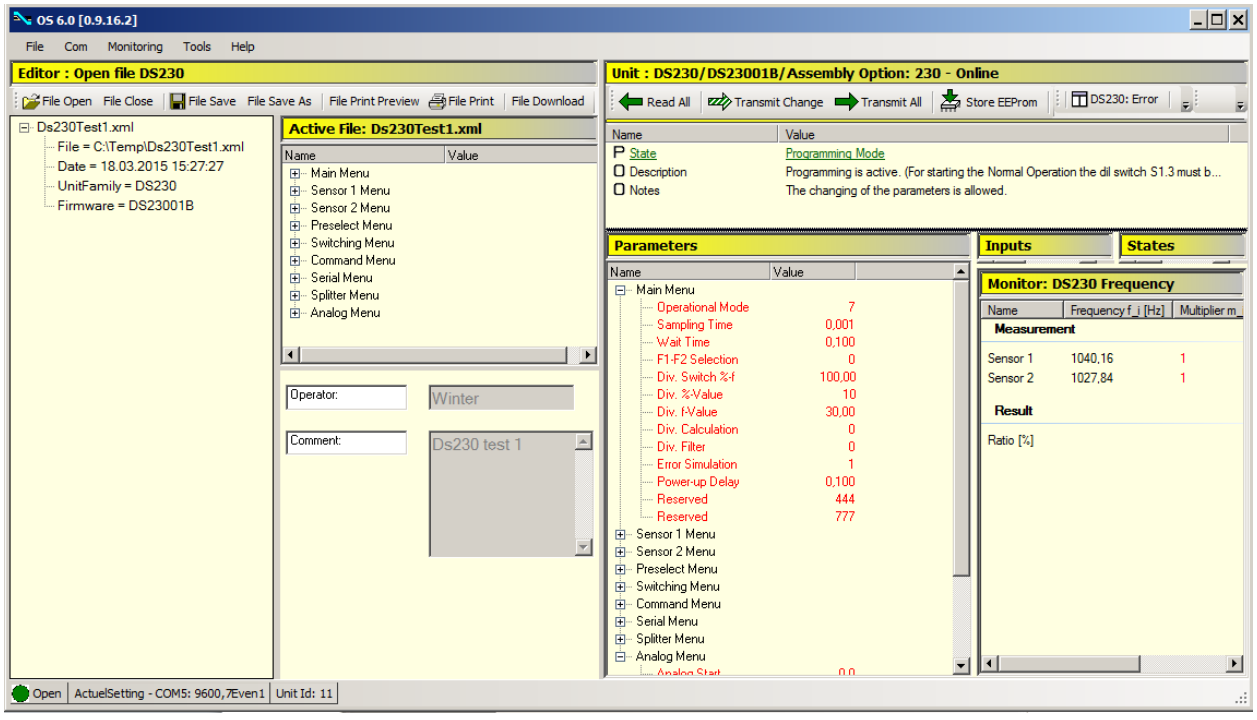


Figure 4-4 Transmit Parameters via „Download File"

Now **all new parameters** can be transmitted to the target unit.

4.2.2. File Editor ← OS6.0 Window

A data transfer from the OS6.0 window into the editor surface is always possible. As shown in the following table, there are two possibilities to do so:

<table>
<tr><th>Possibility 1</th><th>Possibility 2</th></tr>
<tr><td>Active by using the Unit Save As button</td><td>Passive because Connection lost … is detected</td></tr>
<tr><td></td><td>With a lost connection between the OS6.0 surface and the target unit the exception Connection lost …
is activated automatically.

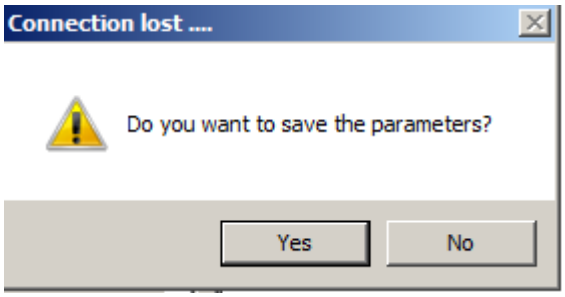
The following pop-up warning appears:
 

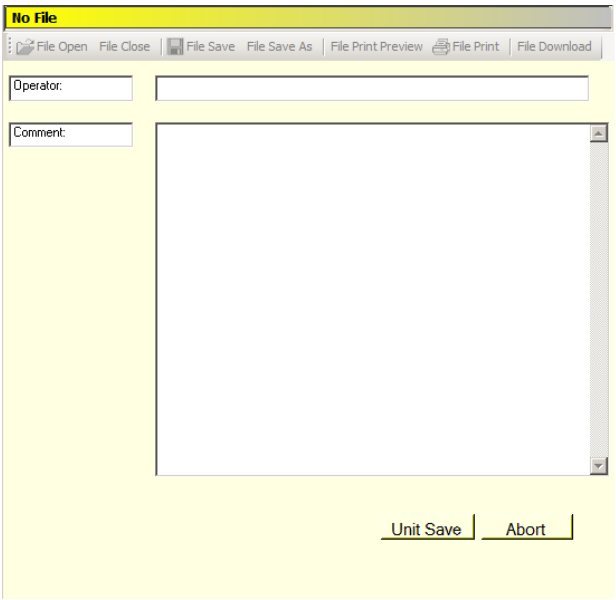
Figure: “Connection lost …” warning</td></tr>
<tr><td>If pressing the Unit Save As button…</td><td>If pressing the Yes button…</td></tr>
<tr><td colspan="2">… the editor input field opens left beside the OS6.0 field.</td></tr>
<tr><td colspan="2"> 
</td></tr>
</table>

Table 4-4 File Editor / OS6.0 Window

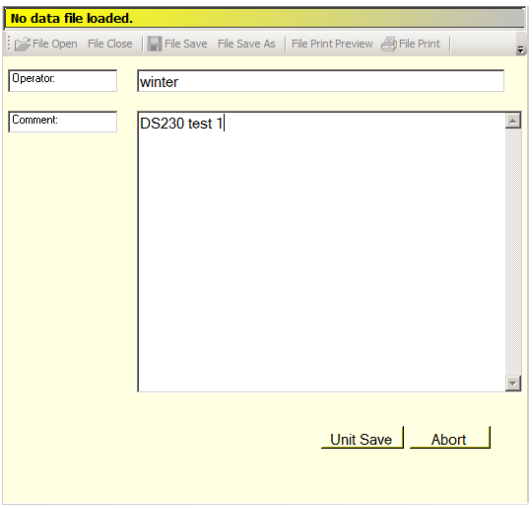
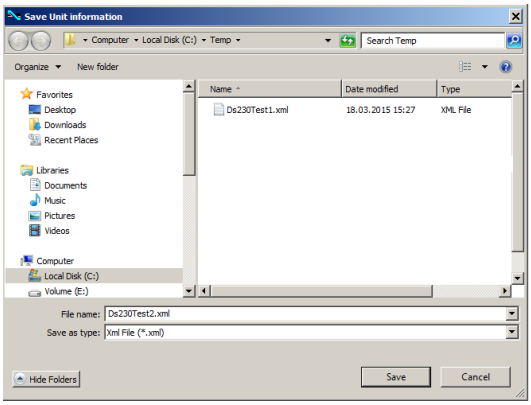
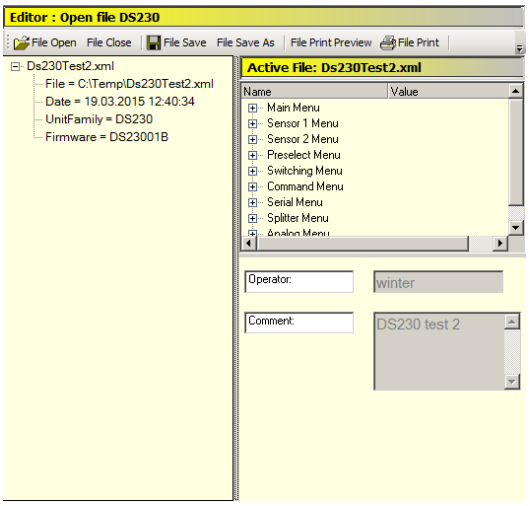
The input field has two optional parameters: 1. **Operator** (to enter a user name) 2. **Comment** (to leave an arbitrary comment). After pressing the **Unit Save** buttons …	
… a **Save File** dialog opens. The saving process is done in the classical way.	
After saving, all parameters are shown in the file editor.	

Table 4-5 Continuation - File Editor / OS6.0 Window

5. Appendix

5.1. Literature

[1] User manual of DS2xx, 236, 240, 246 (download on www.motrona.com)

5.2. Special Cases

#	Special Case	Notice
1	Parameter **UnitId**	Only specific values are allowed for this parameter. Detailed information can be found in the DS2xx user manual [1].

Table 5-1 Special Cases

5.3. System Requirements

Operating System	Windows 7 (all versions)
Hardware*	• 1-GHz processor or higher with 32 bit (x86) or 64 bit (x64) • 1 GB RAM (32-Bit) or 2 GB RAM (64 bit) • Available Storage: - 16 GB for 32-Bit - 20 GB for 64-Bit • DirectX 9 Graphic-Engine with WDDM 1.0 driver or higher • Serial Device (classic COM Port or RS232ViaUsb adapter)

Table 5-2 System Requirements

5.4. Image Directory

Figure 2-1 Overview „OS6.0 Safety Mode“ 5
Figure 2-2 Overview „OS6.0 Safety Mode / Dependencies of the different components 7
Figure 2-3 Info-Field State „Programming Mode“ 8
Figure 2-4 Parameter list / Programming Mode 9
Figure 2-5 Parameter list „disabled“ 9
Figure 2-6 Input Component 14
Figure 2-7 Status Component 15
Figure 2-8 Monitor / DS2xx Errors 16
Figure 2-9 Monitor / DS2xx Frequency 17
Figure 2-10 Monitor / DS2xx Frequency Calibration 18
Figure 2-11 Monitor / DS2xx Monitor - Overview 19
Figure 2-12 Monitor / DS2xx Monitor / Popup-Menu and Control Buttons 20
Figure 2-13 Monitor / DS2xx Monitor / Page Selection by Parameter 20
Figure 2-14 Page List / DS2xx Monitor / Monitor Offline 21
Figure 2-15 Monitor / DS2xx Monitor / Monitor Online 22
Figure 2-16 Page List / DS2xx Monitor / Editing Mode 23
Figure 2-17 “Lost Connection” Warning 24
Figure 3-1 Start Menu for Serial Configuration 25
Figure 3-2 Serial DS2xx Configuration 25
Figure 3-3 Serial Configuration for Standard Units 25
Figure 3-4 Overview / Serial Configuration Tool 26
Figure 3-5 Operation Menu 26
Figure 3-6 COM-Port is open 27
Figure 3-7 COM-Port is closed 27
Figure 3-8 Status Bar / COM Port Information 29
Figure 4-1 File Editor 30
Figure 4-2 Editor Components with a loaded Parameter File 31
Figure 4-3 Example “DS2xx unit is not in the Programming Mode” 33
Figure 4-4 Transmit Parameters via „Download File“ 33

5.5. Table Directory

Table 2-1 Info Field / Indication of Operating States 8
Table 2-2 Info Field/ Error State Indication 9
Table 2-3 Read All 11
Table 2-4 Transmit All 12
Table 2-5 Transmit Change 12
Table 2-6 Save Parameters to the EEProm 13
Table 2-7 Save Parameters as File 13
Table 2-8 Input Component/ Input States 14
Table 2-9 Status Component / Entry States 15
Table 2-10 Monitor / Display Element for Monitor Selection 16
Table 2-11 Monitor / DS2xx Errors – Error Identification 17
Table 2-12 Monitor / DS2xx Frequency - Calibration Conditions 18
Table 2-13 Overview / DS2xx Monitor 19
Table 2-14 Monitor Field / Columns 21
Table 2-15 Monitor Field / Switching to the other Modes 21
Table 2-16 Monitor Field / Display Formats 22
Table 2-17 Switching to „Monitor Offline“ 23
Table 2-18 Monitor Field / Meanings 23
Table 2-19 Mode Switchover 24
Table 2-20 Options in Case of a Lost Connection 24
Table 2-21 General Operating Elements 27
Table 2-22 Operating Elements / Additional Features in case of a closed COM port 28
Table 2-23 Configuration Selection 28
Table 2-24 Operating Elements / Configuration Tools 29
Table 2-25 Status Information / Status Variants 29
Table 2-26 Opening the Editor 30
Table 2-27 Editor / Description of the Components 31
Table 2-28 Functionality of the Editor 32
Table 2-29 File Editor / OS6.0 Window 34
Table 2-30 Continuation - File Editor / OS6.0 Window 35
Table 3-1 Special Cases 36
Table 3-2 System Requirements 36