Smart encoders & actuators

# User's guide

# OS10.0 Standard operator software

- Operator software for Lika programmable devices
- For PCs and notebooks with Windows 8.1 and Windows 10 operating systems
- Additional editor tool for parameter file management

Suitable for the following models:

- IF40
- IF41
- IF42
- LD210
- LD220
- LD350 / LD355
- LD360 / LD365

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# Typographic and iconographic conventions

In this guide, to make it easier to understand and read the text the following typographic and iconographic conventions are used:

- parameters and objects both of the device and the interface are coloured in GREEN;
- alarms are coloured in RED;
- states are coloured in FUCSIA.

When scrolling through the text some icons can be found on the side of the page: they are expressly designed to highlight the parts of the text which are of great interest and significance for the user. Sometimes they are used to warn against dangers or potential sources of danger arising from the use of the device. You are advised to follow strictly the instructions given in this guide in order to guarantee the safety of the user and ensure the performance of the device. In this guide the following symbols are used:

| | |
|---|---|
| | This icon, followed by the word **WARNING**, is meant to highlight the parts of the text where information of great significance for the user can be found: user must pay the greatest attention to them! Instructions must be followed strictly in order to guarantee the safety of the user and a correct use of the device. Failure to heed a warning or comply with instructions could lead to personal injury and/or damage to the unit or other equipment. |
| | This icon, followed by the word **NOTE**, is meant to highlight the parts of the text where important notes needful for a correct and reliable use of the device can be found. User must pay attention to them! Failure to comply with instructions could cause the equipment to be set wrongly: hence a faulty and improper working of the device could be the consequence. |
| | This icon is meant to highlight the parts of the text where suggestions useful for making it easier to set the device and optimize performance and reliability can be found. Sometimes this symbol is followed by the word **EXAMPLE** when instructions for setting parameters are accompanied by examples to clarify the explanation. |

# Preliminary information

This guide is designed to describe the installation and use of the OS10.0 Standard operator software for Lika's interfaces (family of displays and converters).

The OS10.0 Standard operator software described here is suitable for connection, parametrization, operation, and simulation of Lika's interfaces as well as of IFS-10 certified safety devices.
All compatible device types will be immediately detected after connection to a PC which is equipped with OS10.0 software and the appropriate working environment as well as all Windows components.

This software manual describes all operating elements of Lika's standard devices. The description of the operating elements for the IFS-10 certified safety devices can be found in the specific "OS10.0_Safety" manual.

**NOTE**
Figures, screenshots and some descriptions in this software manual refer to a Generic unit, but they also apply to other Lika's devices that could be used with the previous OS6.0 version.

The installation and uninstallation of this program and its components are described in the "MAN OS10.0 Installer E x.x.pdf" manual.

**WARNING**
OS10.0 can be installed on Microsoft® Windows 8.1 or Windows 10 operating systems.

A directory is generated for each user using the OS10.0 software.
The OS10.0 user directory is always created under the path "*C:|Users|<NAME>|Documents|Os100*" where <NAME> is the login name of the user.

# 1 - OS10.0 components

## 1.1 Standard mode

The following Figure shows the OS10.0 page with "Searching unit..." active state. It appears as soon as the program is started:

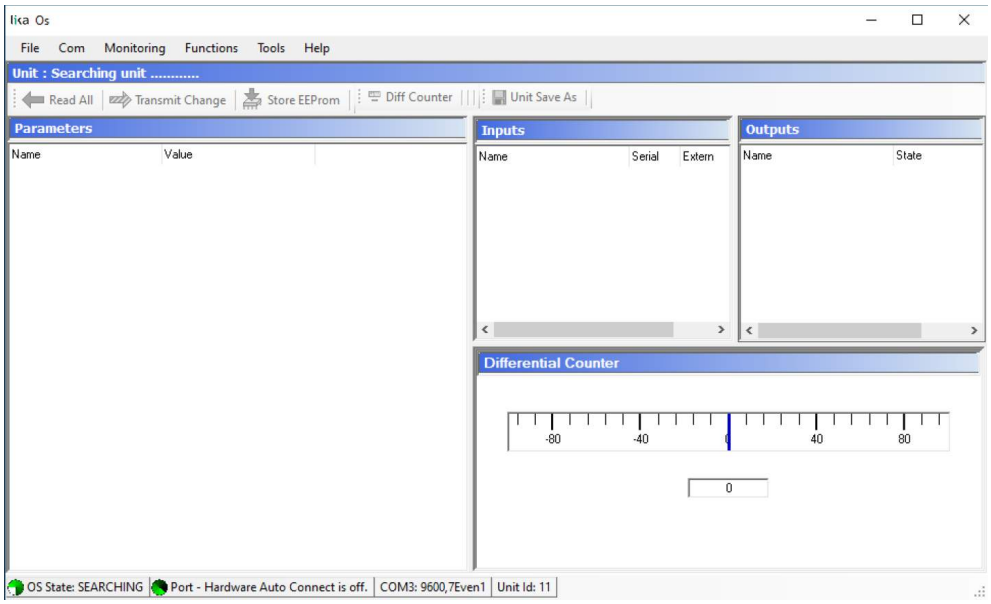



**Figure 1 - "OS10.0 standard" overview**

The OS10.0 software detects automatically all compatible devices connected and switches over to the specific working environment. This manual describes the operating elements for all Lika's standard devices.

## 1.2 OS10.0 components

The OS10.0 compatible devices can be parametrized using the OS10.0 software tool.
The OS10.0 window consists of the following components:

- the list of parameters;
- the list of inputs;
- the list of outputs;
- the simple monitor.

The Figure below shows how the four elements appear.

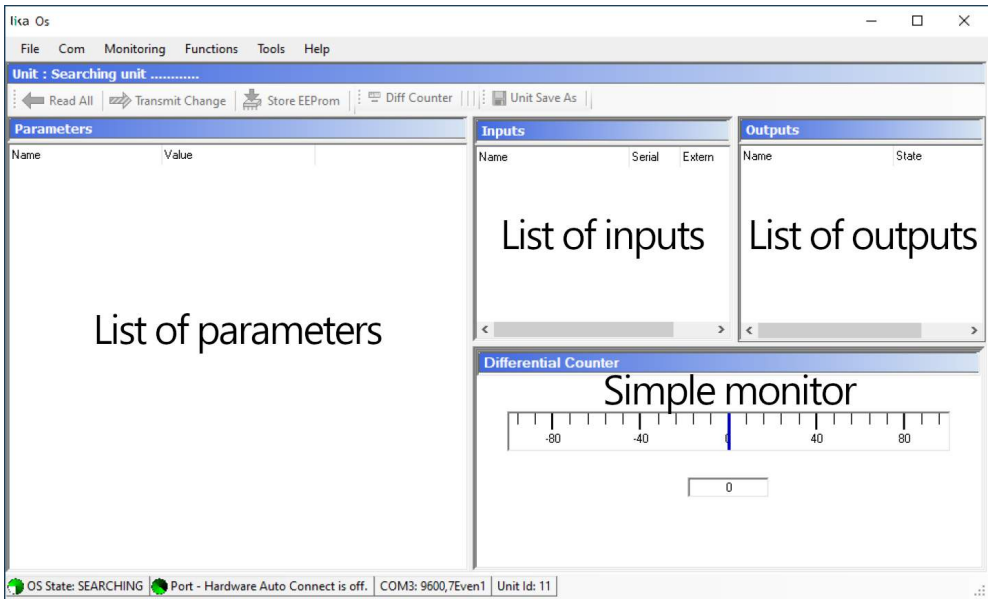



**Figure 2 - OS10.0 window overview - no unit is connected**

A navigation menu and a toolbar with buttons allow an easy and intuitive operation of the components.
If a feature is not available it is greyed out automatically.

## 1.3 Parameter

### 1.3.1 List of parameters

All the parameters of a connected unit are shown in this list (see the Figure below). This list can be used also to edit the values of the parameters.
Every parameter can be read or transmitted individually via a pop-up menu, by right-clicking the parameter.

The Figure below shows, for instance, the **Preselection 2** parameter.

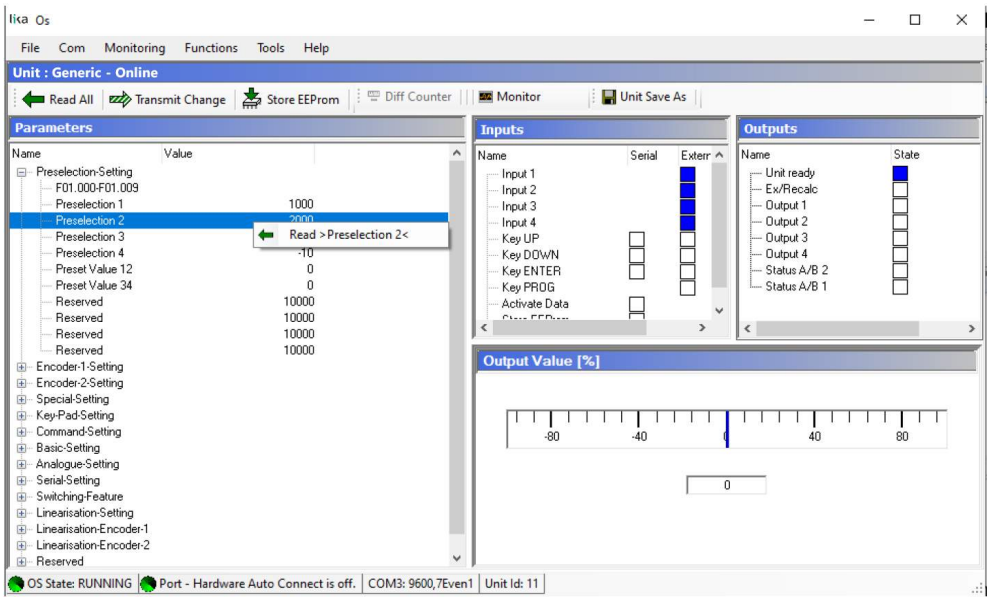
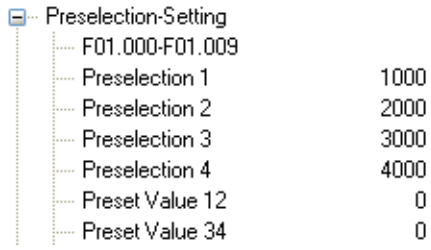
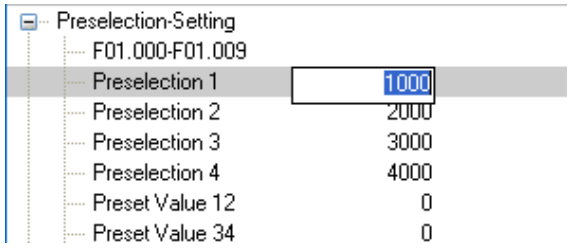
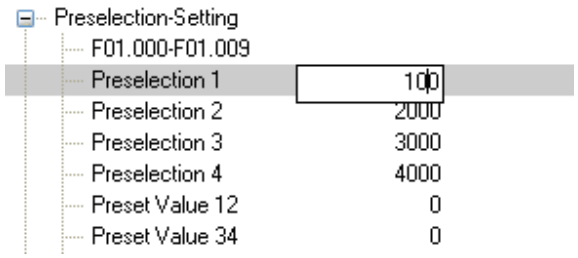
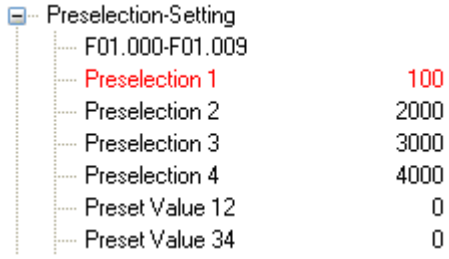



**Figure 3 - List of parameters**

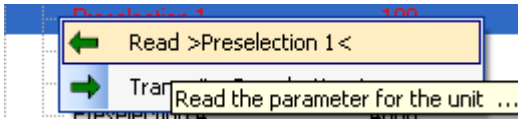
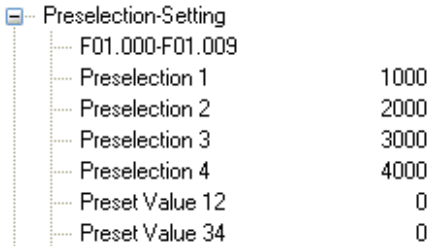
#### 1.3.1.1 Editing a parameter value

It is very simple to edit, read, and transmit a single parameter value, as shown in the following example about the **Preselection 1** item.

| | |
|---|---|
| Double-click on the parameter value. |  |
| An edit field opens automatically. |  |
| Now the parameter value can be changed (e.g. by entering the value "100"). |  |
| By pressing the **ENTER** button, the changed value is confirmed and appears in red automatically. The parameter value is now changed in the software tool, but still not sent to the unit. |  |

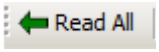
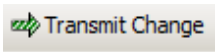
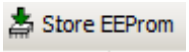
**NOTE**
Please note the exceptions for parameters in the "6 – Appendix" section on page 63.

### 1.3.1.2 Reading a single parameter

| | |
|---|---|
| By using the "Read" pop-up menu a single parameter can be read from the connected unit directly. |  |
| After reading, the parameter appears in black automatically. |  |

### 1.3.1.3 Operations with several parameters

If you need to read or transmit several parameters at the same time the following functions can be used:

| Button | Description |
|---|---|
|  | It allows to read all parameters[1] from the connected unit and **overwrite** all the current parameters in the parameter list. All parameters will appear in **black**. |
|  | Only the changed parameters (shown in red) will be transmitted to the unit. Then the transmitted parameters will be activated automatically by the OS10.0. After activation, all parameters will be "read back" and verified internally. If the match is successful the parameters appear in green automatically. |
|  | It allows to save all parameters on the EEProm: the saving has no influence on the colour of the parameters in the parameter list. |

1 "All parameters" refer to the parameter data sets which are "free switched" in the file editor (see also the "3 – File Editor tool for parameter files" section on page 45).

### 1.3.1.4 Saving the parameters to a file

| Button | Description |
|---|---|
| | To save the parameters to a file the file editor is required. Press the **UNIT SAVE AS** button and the file editor will appear on the left side. |

### 1.3.1.5 Device-dependent special parameters

**NOTE**
Additional special parameters are displayed only in specific devices.

For some devices additional special parameters are displayed.
The Figure below shows these special parameters in a generic example. The meaning of these parameters can be found in the corresponding manual of the device.

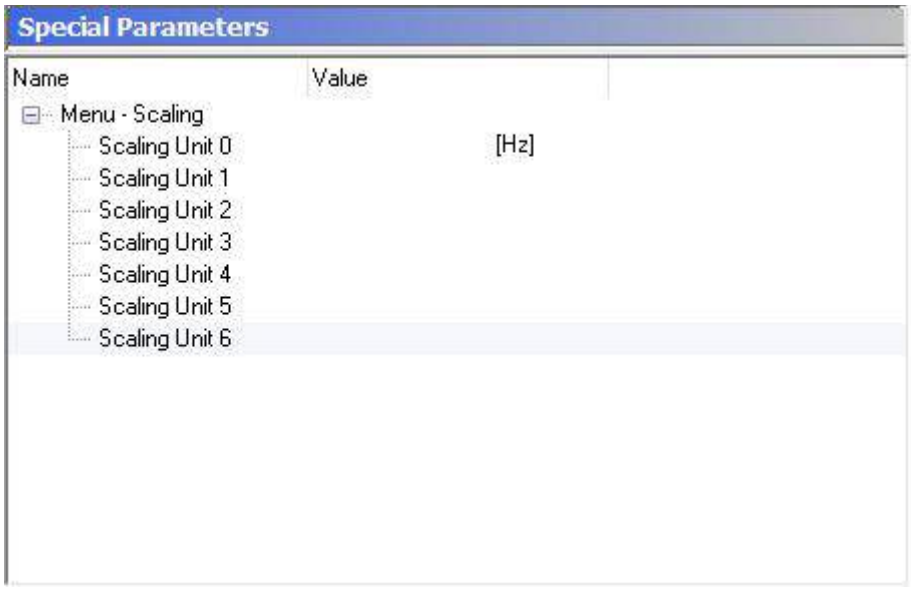



**Figure 4 - Additional special parameters**

To change the special parameter values operate as described above for the standard parameters (see the "1.3.1.1 Editing a parameter value" section on page 12). The display format is set to a text with a maximum length of 16 characters. If the text is longer, the characters on the right will be cut off.

### 1.4 Inputs

The list of the inputs shows the three possible types of inputs available in the unit. The number of the inputs and the used types depends on the connected unit. A description of the inputs can be found in the "User's guide" of the connected device.

| Type of input | Description |
|---|---|
| **Serial** | This type can be triggered via the OS10.0.<br>It can be activated/deactivated by double-clicking the status icon. |
| **Extern** | External inputs of a unit.<br>External inputs can be activated/deactivated in the unit only. |
| **Bus** | External inputs can be activated/deactivated via CAN bus.<br>(only available in specific units) |

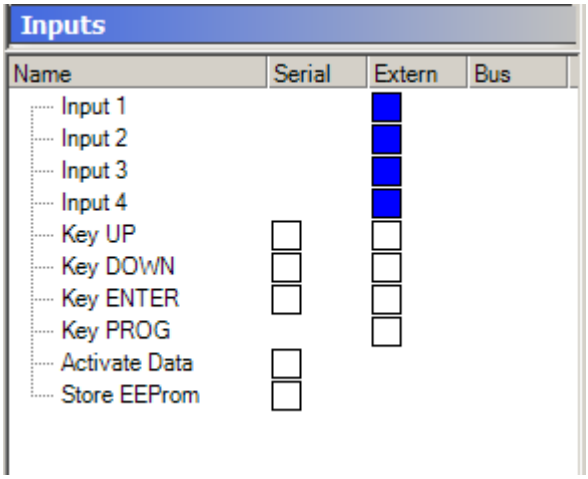



**Figure 5 - List of inputs (example)**

| Status icon | Description |
|---|---|
| ☐ | The input is deactivated. |
| ■ | The input is activated. |

## 1.5 Outputs

The list of the outputs shows different outputs types such as hardware outputs and status messages. The number of the outputs and the types depends on the connected unit. The outputs cannot be changed via the OS10.0.

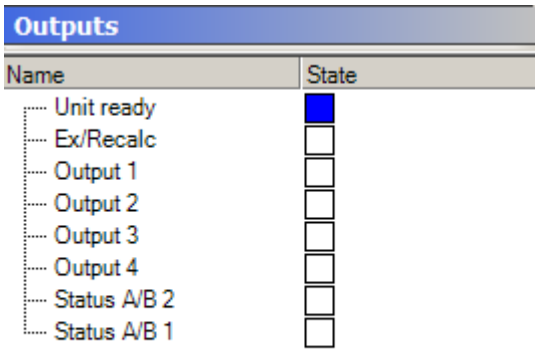



**Figure 6 - List of outputs (example)**

| Status icon | Description |
|---|---|
| ☐ | The output is deactivated. |
| ■ | The output is activated. |

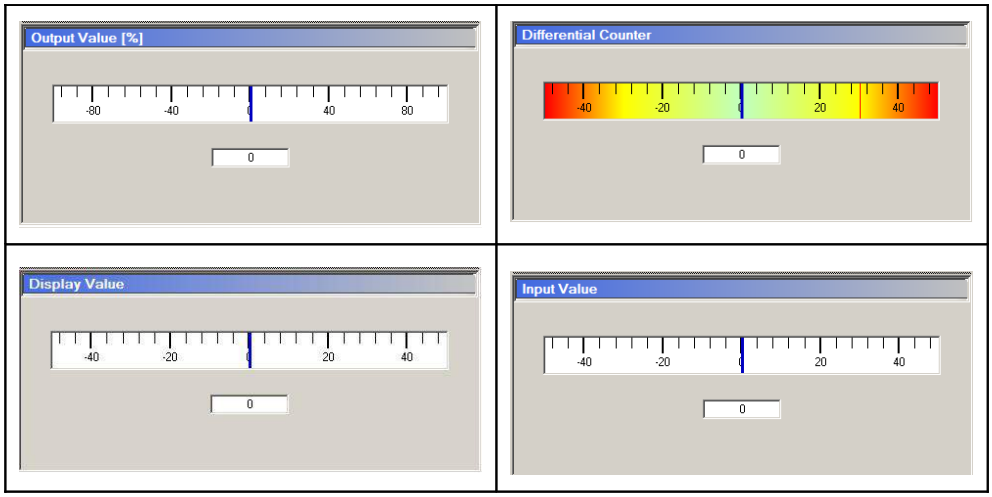
## 1.6 Monitors

The standard mode offers two different types of monitors by means of which a device can be monitored.

### 1.6.1 Difference Counter

This type of monitor provides special readings that may vary depending on the device type.

This monitor windows display special values measured in different ways, depending on the connected device type (see the screenshot):




In the "User's guide" of the device you can find the type of window that is relevant for it.

### 1.6.2 Monitor

The monitor provides an easy way to monitor the state of a device. Depending on the requirements, one or more parameters can be monitored and stored on a so-called "log" file.

For each device the monitor loads suitable data or variable sets. The meaning of the monitor variables can be found in the "User's guide" of the corresponding device.

The description of the monitor and its functionality is shown by means of the example of the Generic device, but it concerns every Lika device.

### 1.6.2.1 Overview

The monitor is organized into four sections or modes (see the Figure below).

**Figure 7 - Monitor overview**

The function of each section/mode is summarized in the following table.

| Name | Function |
|---|---|
| **Monitor Offline** | Display mode:<br>Display of all available or selected variables. |
| **Monitor Online** | Monitor mode:<br>Cyclic readout and display of the selected variables. |
| **Editing Mode** | Editor mode:<br>Selection of one or several monitor variables for the monitoring mode. |
| **Configuration** | Configuration mode:<br>This mode is suitable to set monitor-specific configurations. |

### 1.6.2.2 General use

The monitor is very easy to use by means of either a pop-up menu or the control buttons (see the Figure below).

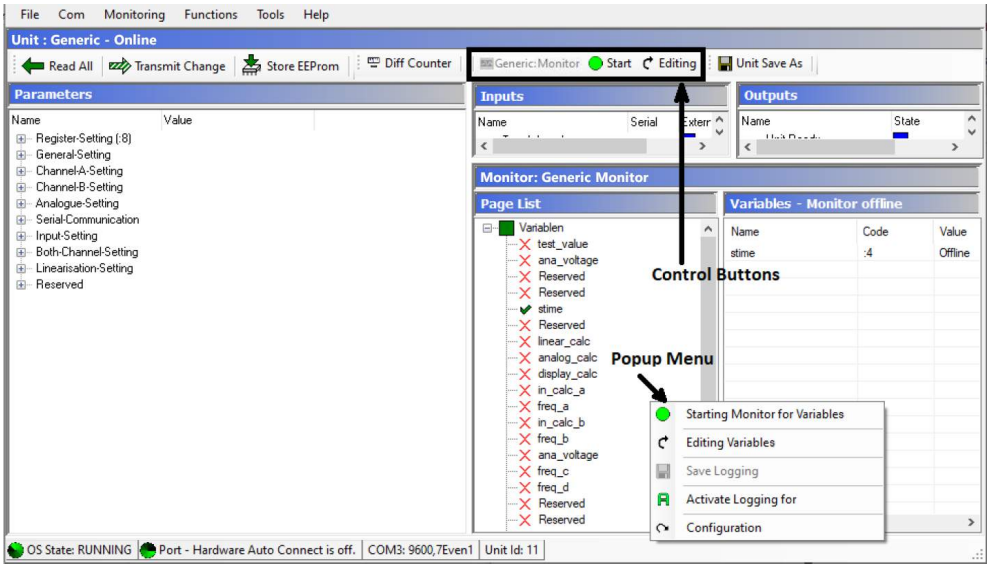



**Figure 8 - Monitor / Pop-up menu and control buttons**

Depending on the mode used, different pop-up menus and control buttons are available. The pop-up menu is the main control of the monitor. It opens by right-clicking on the page list (see also the Figure above).

Unusable controls are automatically greyed out (for example: the control button

in the Figure above).

### 1.6.2.3 Display mode: Monitor Offline

**Monitor Offline** is a simple display or overview mode and shows the selected set of variables.
After starting the monitor this mode is shown automatically.

The monitor is divided into two sections: the **Page List** (on the left) and the **Monitor Panel** (on the right).

#### Page List (left)

All variables to be monitored by the monitor are marked by the icon ✔. These variables are also shown in the monitor panel (on the right). All other variables are marked by the icon ✘.

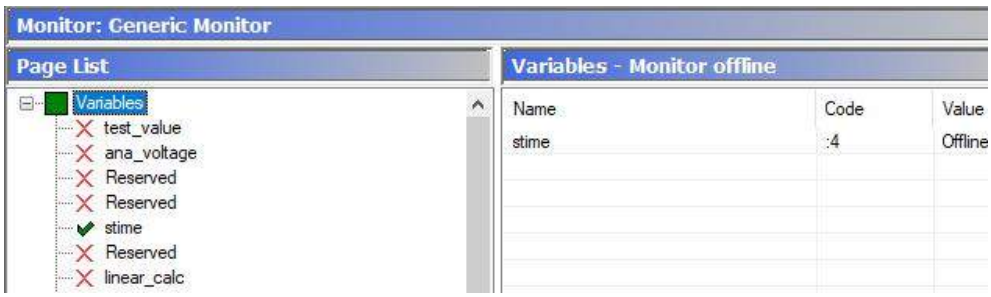



**Figure 9 - Monitor – Page List / Monitor Offline**

#### Monitor panel (right)

In the monitor panel (right), all variables to be monitored are shown. In the Figure above, the "stime" variable is available.

The monitor panel is divided into four columns:

| Column | Meaning |
|---|---|
| **Name** | Name of the variable |
| **Code** | Code of the variable |
| **Value** | To identify the **monitor offline** status, "Offline" is always shown |
| **Display Format** | Not relevant for this mode |

### 1.6.2.4 Menu and controls (Monitor Offline)

For the display mode the following menus/controls can be used (see the Figure below).

**Figure 10 - Monitor – Monitor Offline / Pop-up menu (left) and Control buttons (right)**

| Pop-up menu | Control button | Note |
|---|---|---|
| Starting Monitor for >Variables< | Start | Switching to the Monitor mode |
| Editing Variables | Editing | Switching to the Editor mode |
| Save Logging | | Saving of the Logging *) |
| Activate Logging for stime | | Activation of the Logging for "stime" *) |
| Configuration | - | Switching to the Configuration mode *) |

*) The use is explained as part of the Logging, see the "1.6.2.10 Data Logging" section on page 27.

### 1.6.2.5 Monitor mode: Monitor Online

This mode is the current monitor or monitoring mode.

#### Page List (left)

The page list displays all the available variables.

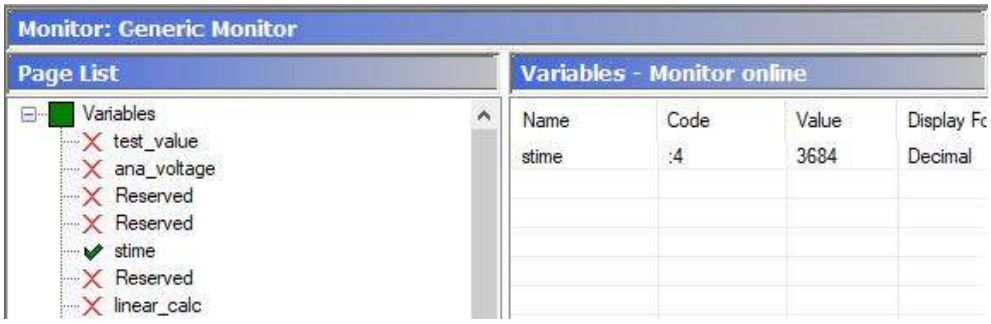



**Figure 11 - Monitor – Monitor / Monitor Online**

#### Monitor panel (right)

All variables shown in this list are read out cyclically by the device and the values are output in the "**Value**" column. The Figure above shows for example the variable "stime". For each displayed variable, the display format can be specified individually (see the Table below).

| Column | Note |
|---|---|
| **Name** | Name of the variable |
| **Code** | Code of the variable |
| **Value** | Current readout value of the variable |
| **Display Format** | Current display format in the *"Monitor Online"* mode.<br>Available display formats:<br><br>**Name of format** / **Note**<br>**Decimal** – Normal, decimal display<br>**Hex** – 8 digit, hexadecimal display<br>**Binary** – 32 digit, binary display<br><br>The format can be changed by pressing the respective variable line. |

### 1.6.2.6 Monitoring: cyclic reading of the parameters

The monitor works in so-called "cycles". The monitor panel (on the right) shows the cyclical process from top to bottom. One variable is recorded per each cycle.

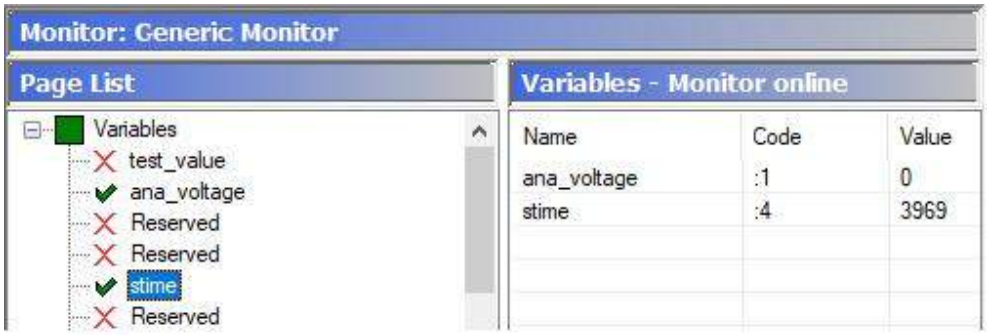



**Figure 12 - Monitor – Monitor / Monitor Online - example**

In the example above the cycles are performed as follows (see the selected variables in the Page List on the left):

| | |
|---|---|
| 1st cycle: | ana_voltage |
| 2nd cycle: | stime |
| 3rd cycle: | ana_voltage |
| 4th cycle: | stime |
| 5th cycle: | etc. |

### 1.6.2.7 Menu and controls (Monitor Online)

The following controls are available for this mode:

**Figure 13 - Monitor Online - Pop-up menu (left) and Control buttons (right)**

The table below explains the task of the individual controls. Unusable controls are not listed.

| Pop-up menu | Control button | Note |
|---|---|---|
| Stopping Monitor for >Variables< | Stop | Switching to the Display mode |

### 1.6.2.8 Editor mode: Editing Mode

This mode is used to select / deselect the variables to be monitored.

#### Page List (left)

In the page list the desired variables are selected. The selected variables are indicated by the activated checkbox ☑ on the left of the variable name. These variables are also shown in the monitor panel (on the right). Variables that are not selected are indicated by a deactivated checkbox ☐ (see the Figure below).

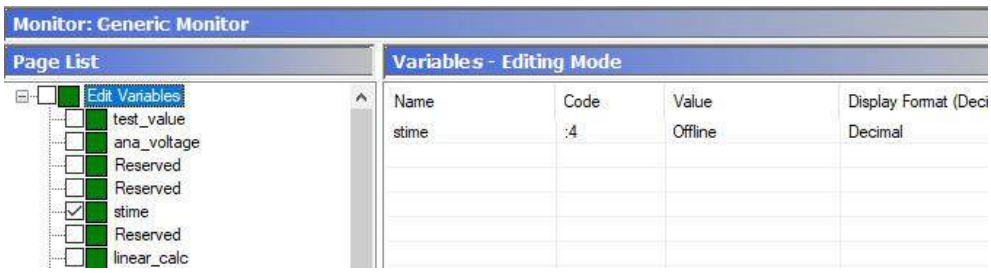



**Figure 14 - Editing Mode / Page list**

The selection or deselection of the variables is done by simply selecting the checkbox on the left of each variable name. The monitor panel is updated automatically.

#### Monitor panel (right)

In this mode the monitor panel shows the selected parameters only.

| Column | Note |
|---|---|
| **Name** | Name of the variable |
| **Code** | Code of the variable |
| **Value** | To identify the **editing mode** status, "Offline" is always shown |
| **Display Format** | Not relevant for this mode |

### 1.6.2.9 Menu and controls (Editing mode)

The following controls are available for this mode:

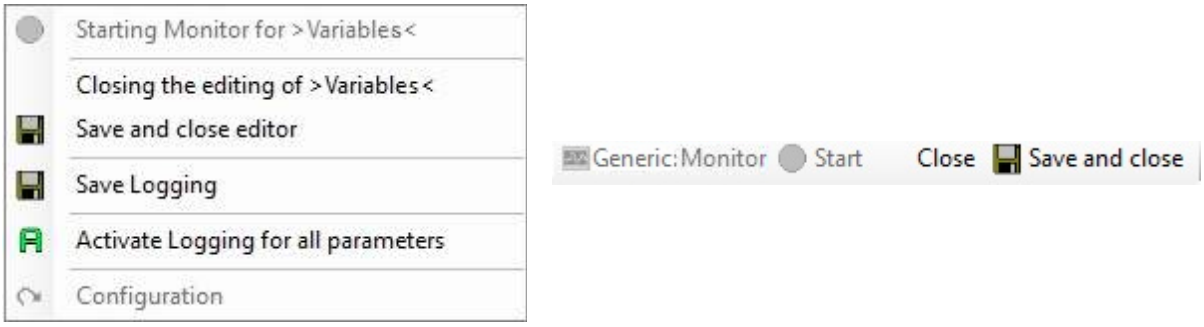



**Figure 15 - Editing Mode / Pop-up menu (left) and Control buttons (right)**

The table below explains the task of the controls. Unusable controls are not listed.

| Pop-up menu | Control buttons | Note |
|---|---|---|
| Closing the editing of >Variables< | Close | Switching to the Display mode |
| Save and close editor | Save and close | Switching to the Display mode<br><br>In addition, this selection is saved in a device-dependent configuration file and is available for later use. |
| Save Logging | - | Saving of the Logging *) |
| Activate Logging for all parameters. | - | Activate the Logging for all variables*) |

*) The use is explained as part of the Logging, see the "1.6.2.10 Data Logging" section on page 27.

### 1.6.2.10 Data Logging

An individual data log can be created for each selected variable. The most important properties are listed in the following table.

| Data Log property | Note |
|---|---|
| **Individual** data log | Each variable has its own data log. |
| **Deleting** the entries | When the monitor is started (change to Monitor mode), all logs are ALWAYS cleared automatically. |
| **Maximum size** | A data log consists of max. 10,000 entries.<br>When the number of 10,000 entries is reached in a data log, then no new entry is added. |
| **Save** and **evaluate** | Each data log can be saved to a file. The stored data can be organized and evaluated by means of a suitable program. |

### 1.6.2.11 Restriction for logging: time interval

The time interval of logging is limited for two reasons.

| Limitations by | Limitation |
|---|---|
| **Data transfer** | A serial data transfer takes some time. Unfavourable configuration settings can significantly degrade the time interval. |
| **OS10.0** | The monitor has to share the serial port with the other components.<br><br>The OS10.0 is used also for other components besides the monitor, such as for Inputs (see on page 15), Outputs (see on page 16) or the programming of the parameters (see on page 11). All these components communicate with the connected Lika device via the same serial interface. |

**NOTE**
The time interval between two log entries is at least ~330-375 msec.

In addition, the specification of a minimum time interval between logs described below is subjected to the above restriction.

For the sake of simplicity, the logging is explained using an example and requires the following steps:

- Selection of Variables
- Execution of the logging

- Saving and evaluation
- Special settings

## 1 Selection of Variables

The selection of the parameters is made optionally when the Display or Editor mode is active.

As the selection procedure is identical in both modes, it is only shown in the Display mode. The example used here implies that the desired parameters have been previously selected in the Editor mode.

The initial situation is shown in the Figure below.

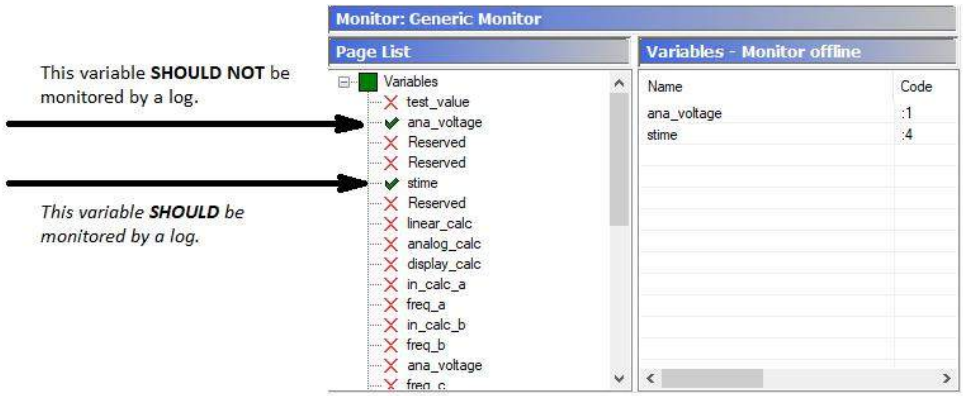



**Figure 16 - Logging - Selection of parameters: initial situation**

Activate the "stime" variable (e.g. by pressing the mouse left button).

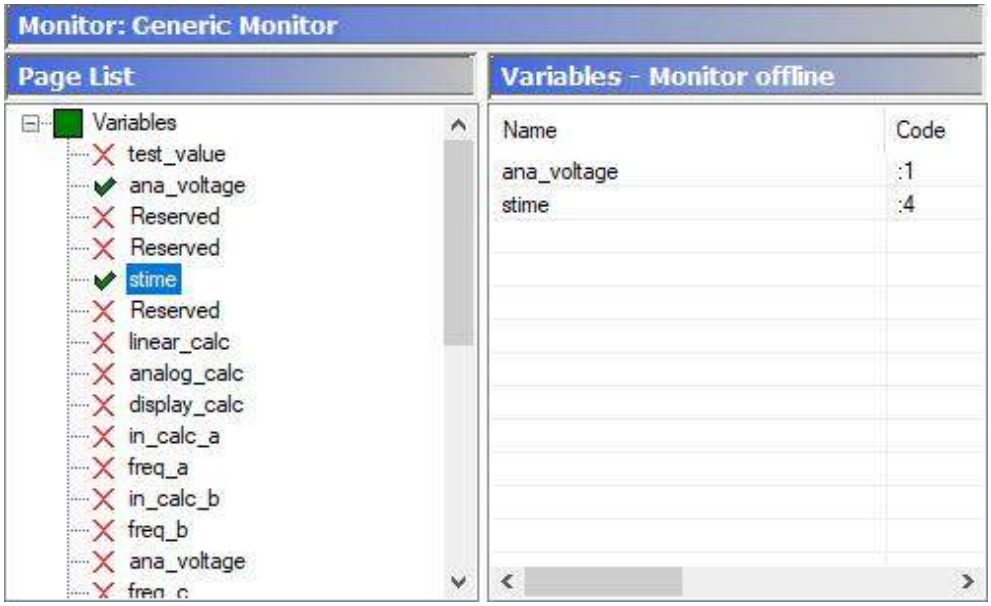



**Figure 17 - Logging - Choice of parameter: selection of parameters**

Open the pop-up menu. Make sure that the desired variable is shown in the corresponding menu (see also the Figure below). Activate logging by pressing the command Activate Logging for stime .

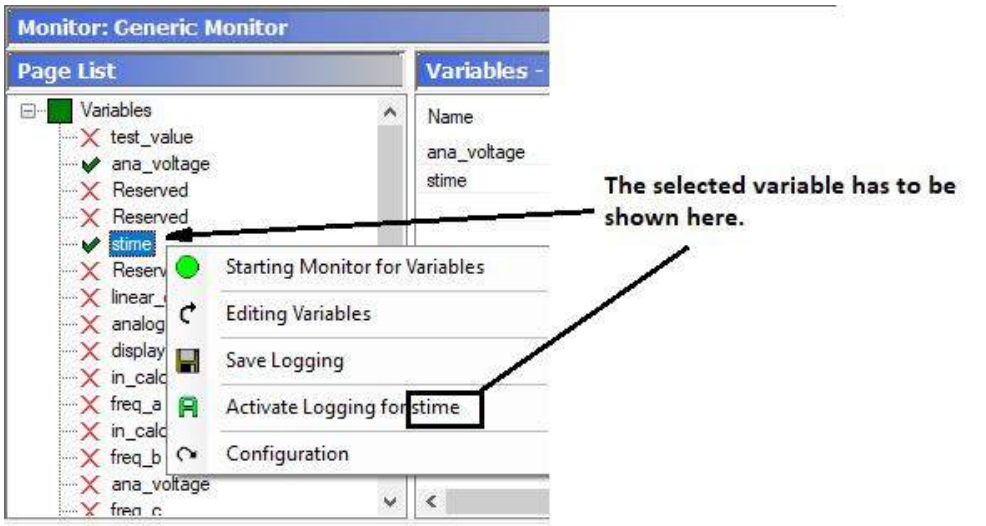



**Figure 18 - Logging - Choice of parameter: selection of variables - before activation**

The activated variable is automatically displayed in *italics and underlined* both in the Page List and in the Monitor field (see the Figure below).

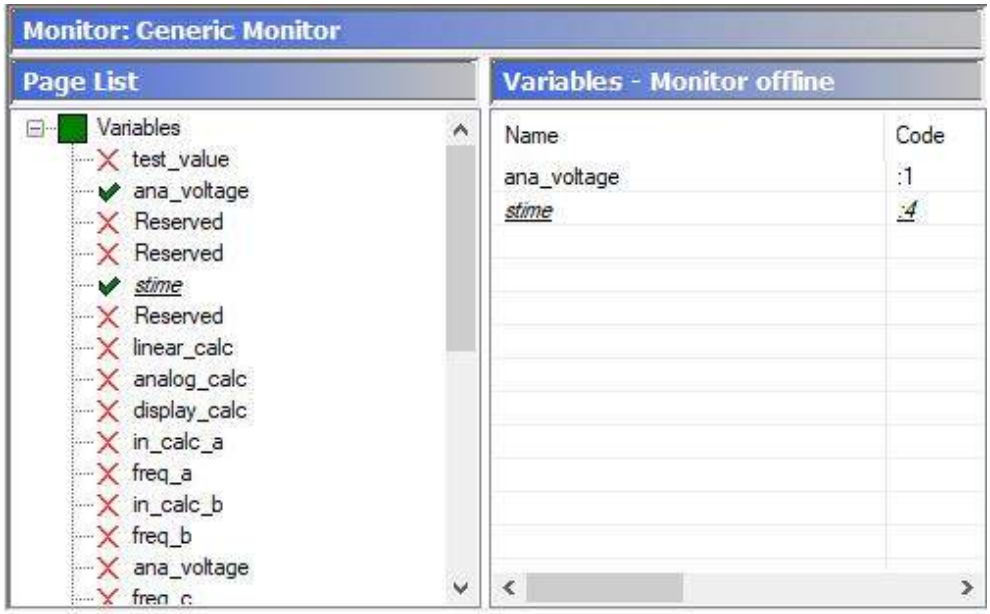



**Figure 19 - Logging - Choice of parameter: selection of variables – after activation**

The deactivation of this single variable is done in the same way by pressing the command DeActivate Logging for stime and will therefore not be further

explained here. Of course, another variable or all variables can be activated or deactivated in the same way.

## 2 Execution of the logging process

Start the monitoring process by switching to the Monitoring mode (see the Figure below).

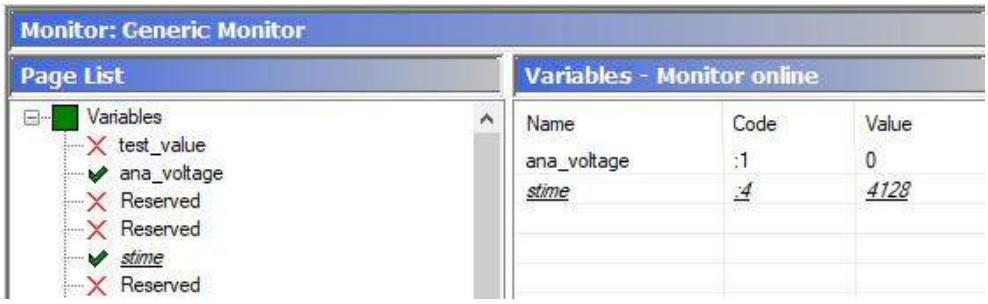



**Figure 20 - Logging - Execution**

The logging process runs automatically and ends either by ending the Monitoring mode (by switching to the Display mode) or by reaching the maximum number of 10,000 entries.

## 3 Saving and evaluation

Data can be saved when the Display mode or the Editor mode are active. As the selection process is the same in both modes, it is shown for the Display mode only.

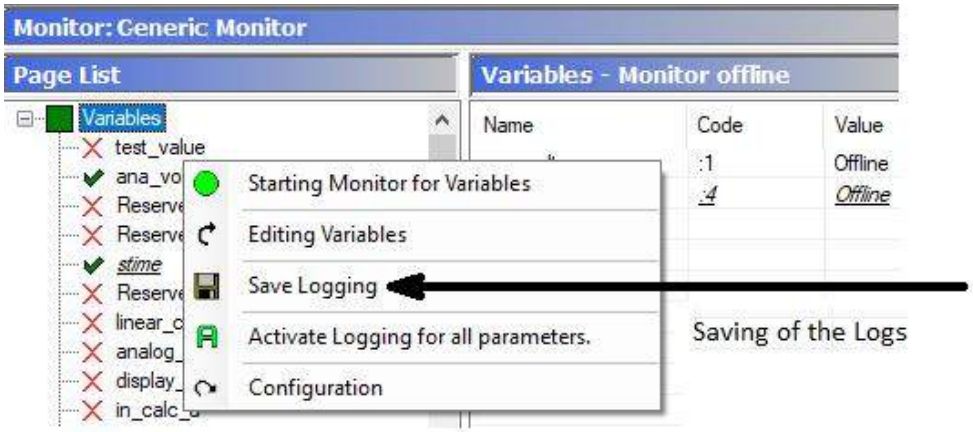



**Figure 21 - Logging - Saving the Log files**

The recorded log files are saved by pressing the Save Logging command.

### Location of the Log files

Every Log is saved in a subdirectory ("\Os100\Monitoring") of the OS10.0 main directory. This directory cannot be changed (see the Figure below).

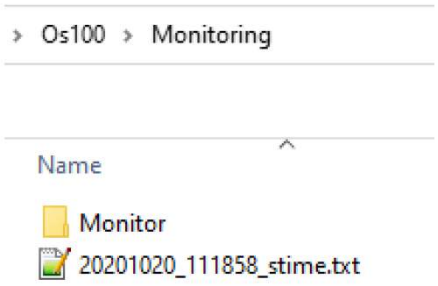



**Figure 22 - Logging - Location of the Log files**

### Name of a Log file

The name of a log file is generated automatically according to the following pattern:

<date of saving>_<time of saving>_<name of the variable >.txt.

The date of saving is written in big-endian format (YearMonthDay). The time of saving has the pattern "HourMinuteSecond".

### Structure of a Log file

The Log file is structured as a simple text file (see the Table below).

| Example of a Log | Note |
|---|---|
| #;Name;Code;LogTime;Value | <- heading |
| 0;stime;":4";+2-2019.09.19-13:24:41.900;+3973 | <- entry 0 (starting entry) |
| 1;stime;":4";+2-2019.09.19-13:24:42.588;+3684 | <- entry 1 |
| 2;stime;":4";+2-2019.09.19-13:24:43.306;+3972 | <- entry 2 |
| 3;stime;":4";+2-2019.09.19-13:24:44.056;+3973 | <- etc. |
| ... | ... |
| 9999;stime;":4";+2-2019.09.19-15:21:22.798;+4127 | <- entry 9,999 (max. possible entry) |

The first line of a Log is always a heading followed by the starting entry (entry 0). After this the other log entries are listed. A log has a maximum of 10,000 entries (0 ... 9,999).

### Structure of a Log entry

The entry is divided into five parts separated by a semicolon ( ; ) and has the following structure:

<Number>;<Name>;<Variable Code>;<Time Stamp >;< Value >

| # | Part | Note |
|---|---|---|
| 1 | Number | Current number of the entry; range of the value [0 ... 9999] |
| 2 | Name | Name of the entry |
| 3 | Variable Code | Code of the selected variable<br><br>This part is always put in quotation marks and has the following structure: "<Variable Code>"<br><br>Reason:<br>As it is a code, values such as "; 4" or "; 9" are accepted. Therefore the quotes identify the code. |
| 4 | Time Stamp | Time when the entry has been created.<br><br>Structure of a time stamp:<br>z-yyyy.MM.dd-hh.mm.ss.fff where:<br><br>z (time zone)<br>yyyy (Year), MM (Month), dd (Day),<br>hh (24-hour representation), mm (Minutes), ss (Seconds), fff (Milliseconds) |
| 5 | Value | Logged value of the selected variable |

## 4 Special settings

By means of the Configuration mode a minimum log interval between two log entries can be specified.

**NOTE**
As a result of the limitations explained in the "1.6.2.11 Restriction for logging: time interval" section on page 27, only a minimum interval between logs can be specified. An exact specification of this interval is not possible.

### Switching to the Configuration mode

By means of the pop-up menu Configuration the Display mode can be switched to the Configuration mode (see the Figure below).

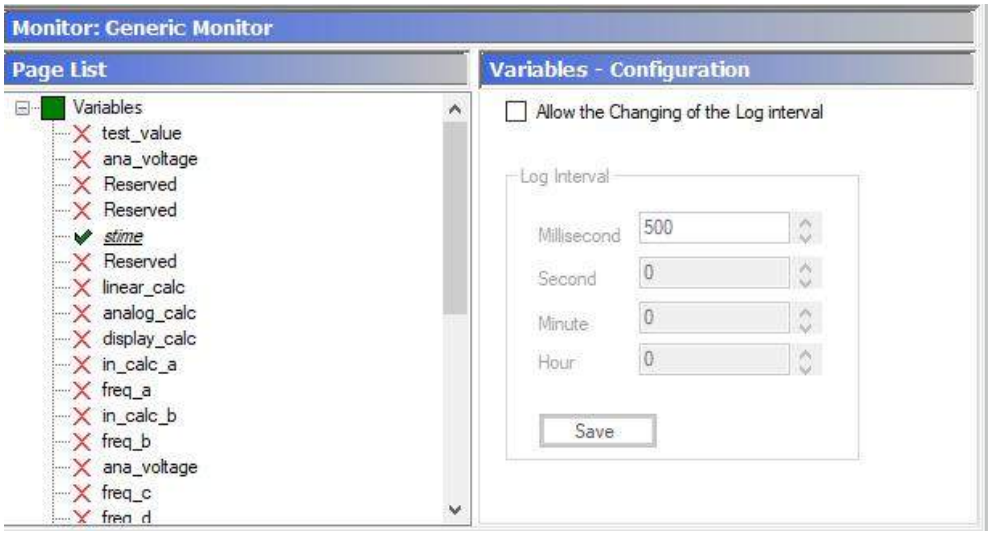



**Figure 23 - Logging - Configuration mode: List of variables (left) and Field of configuration (right)**

### Field of configuration (right)

The field of configuration is protected against unintentional changes. To make changes, the field ☐ Allow the Changing of the Log interval has to be activated by selecting the checkbox (see the Figure below).

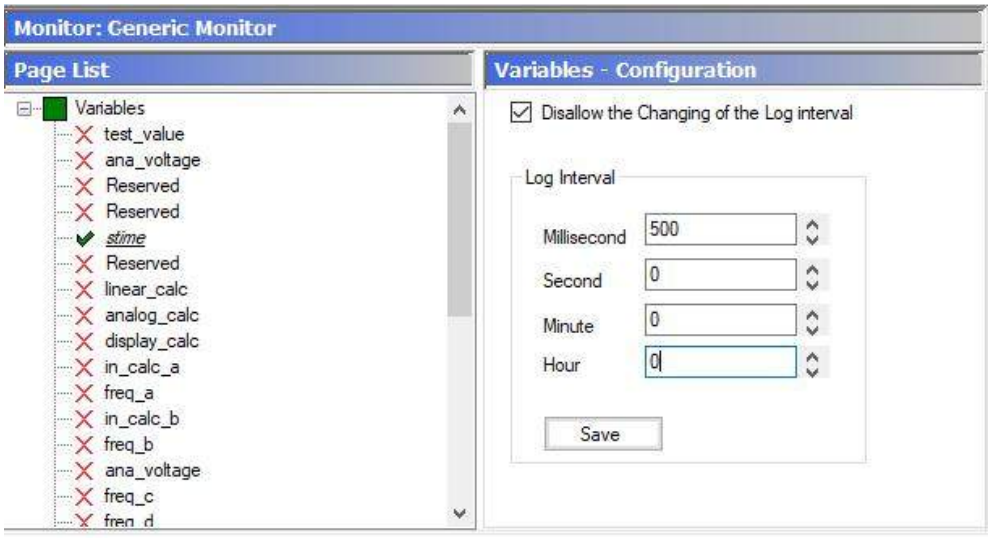



**Figure 24 - Logging - Configuration mode: setting a logging interval**

To set a minimum interval between the log entries you must configure the time parameters listed below.

| Time parameter | Note |
|---|---|
| Millisecond 500 | Allows to set the milliseconds; range [0,999] |
| Second 0 | Allows to set the seconds; range [0,59] |
| Minute 0 | Allows to set the minutes; range [0,59] |
| Hour 0 | Allows to set the hours; range [0,23] |

**NOTE**
The minimum time interval between two log entries set here and limited according to the explanation in the "1.6.2.11 Restriction for logging: time interval" section on page 27 CANNOT be broken.

### Menu and controls

The following controls are available for this mode:

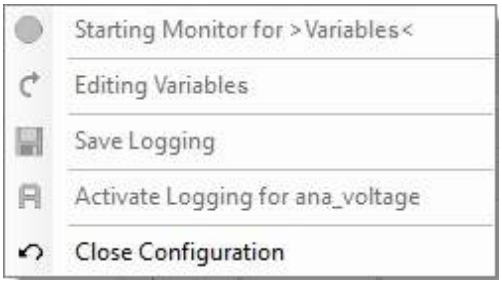



**Figure 25 - Logging - Configuration mode: Pop-up menu (left) and Control buttons (right)**

The table below explains the task of each control. Unusable controls are not listed.

| Pop-up menu | Control button | Note |
|---|---|---|
| Close Configuration | | Takeover of the log interval and switch to the Display mode. |
| | Save | Saving of the log interval in a Config file. |

### 1.7 Exception: Connection lost ...

If the OS10.0 loses the connection to the unit, a warning message appears on the screen immediately.

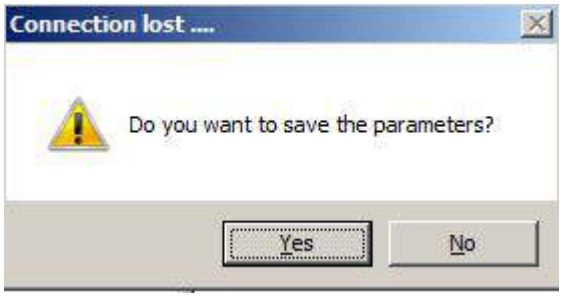



**Figure 26 - Connection lost ... warning message**

Two options are available to the user now:

| Button | Action |
|---|---|
| Press **YES** | It saves all parameters to a file by means of the File Editor tool. If you do not save data, it will be lost. |
| Press **NO** | Data will not be saved. |

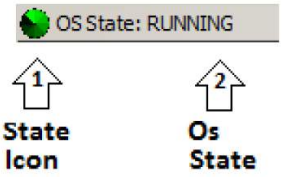
Regardless of the choice, all data will be deleted and no more available in the OS10.0.

**WARNING**

The OS10.0 software is not able to distinguish between a lost connection and a faulty or broken COM port. Therefore both states will be treated in the same way.

### 1.8 Status information

The state of OS10.0 is shown in the status bar (see the Figure).




1. (left): the current state of the OS10.0 is shown as an icon.
2. (right): the current state of the OS10.0 is shown as a text.

**Figure 27 - Information about the current state**

The OS10.0 has five different operating states (OFFLINE, REINIT, SEARCHING, CONNECTING, and RUNNING). The table below describes each state.

| State | Tool Tip Text | Meaning |
|---|---|---|
| | "No COM port. Please check your COM port settings ..."; | The OS10.0 is not connected to a serial interface or the interface is closed. |
| | "Re-initialization of the control..."; | The OS10.0 reinitializes its individual components. |
| | "No unit is connected. Searching unit ..."; | The OS10.0 opens the selected serial interface. Then the OS10.0 searches a device connected to the interface. |
| | "Unit found. Downloading unit information ... "; | The OS10.0 has found a device and downloads the device data. |
| | "Unit is connected. System is working ..."; | The device data download is complete. The OS10.0 is in the normal operating mode. |

# 2 - Serial configuration

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

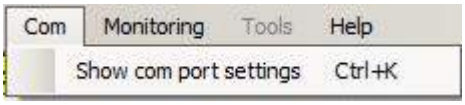



**Figure 28 - Serial Configuration: Start Menu**

Depending on the connected device (IFS-10, any compatible device, or no device), the configuration tool appears in different background designs:

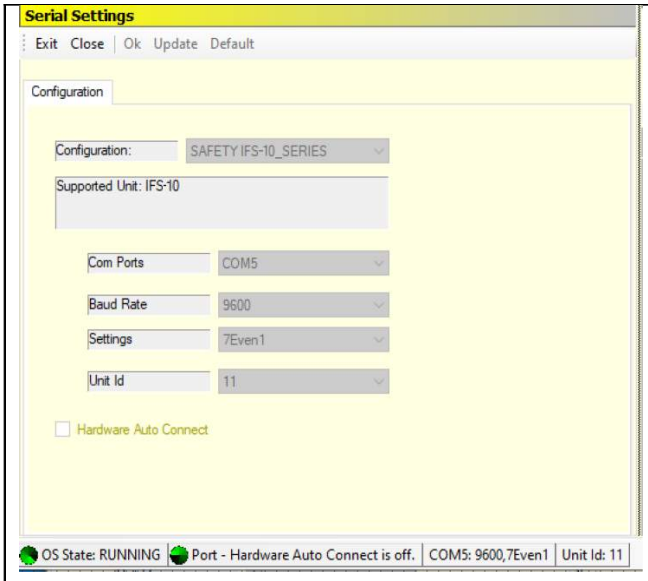



**Figure 29 - Serial Configuration of IFS-10**

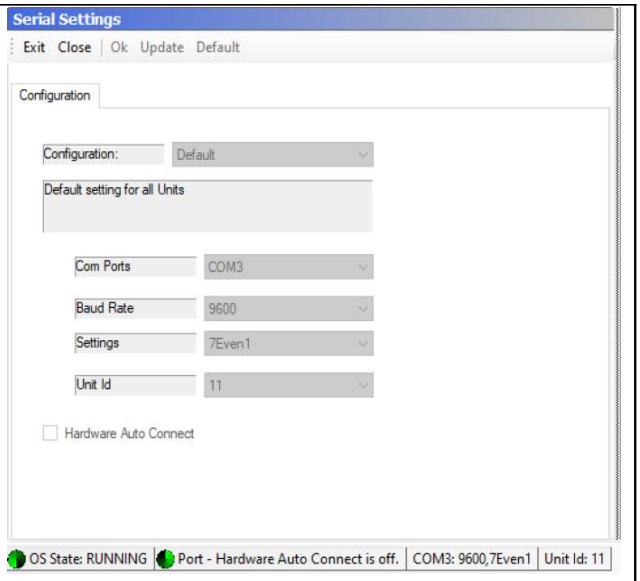



**Figure 30 - Serial Configuration for Standard Units**

This manual describes only the serial configuration for the standard devices (Figure on the right).

## 2.1 Overview

Structure of the configuration tool:

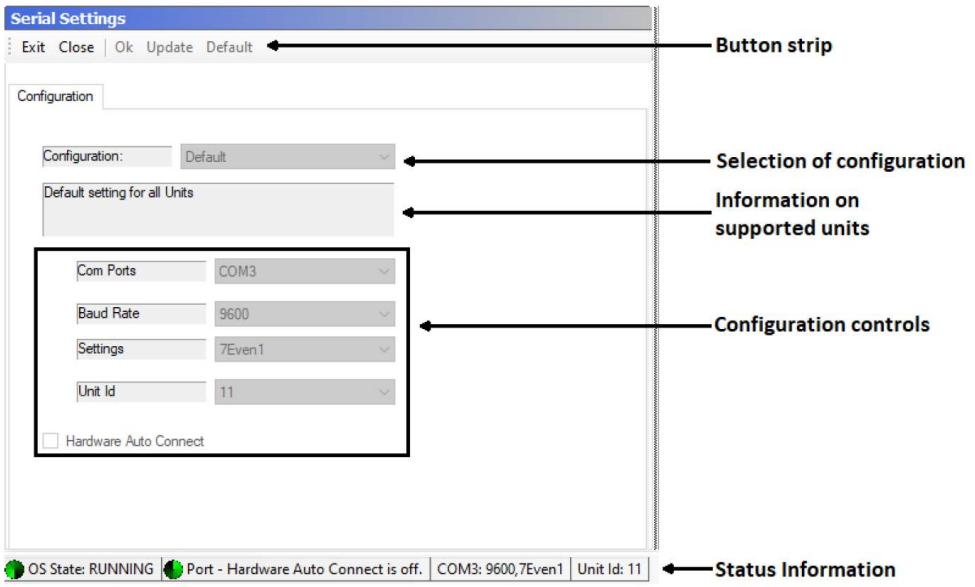



**Figure 31 - Serial Configuration overview**

For general operation a **menu bar** is available:

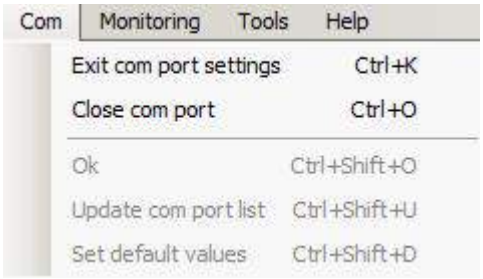



**Figure 32 - Serial Configuration Tool**

The **Selection of configuration** drop-down box allows to change between different settings. The supported devices are displayed in the **Information box** under **Selection of configuration**.

The four items Com Ports, Baud Rate, Settings and Unit Id of the **Status information** bar are used to select and set the COM port or the unit number.

## 2.2 General Operating elements

The basic control elements that allow to exit the Configuration window and open or close the COM ports are shown below:

| Button | Menu | Notes |
|---|---|---|
| Exit | Exit com port settings Ctrl+K | Used to exit the configuration window without changes in the settings |
| Close | Close com port Ctrl+O | Used to close the current COM port with Activation of "Ok", "Update", and "Default" commands |

Depending on whether the COM port is open or closed, one of the two variants shown below will appear:

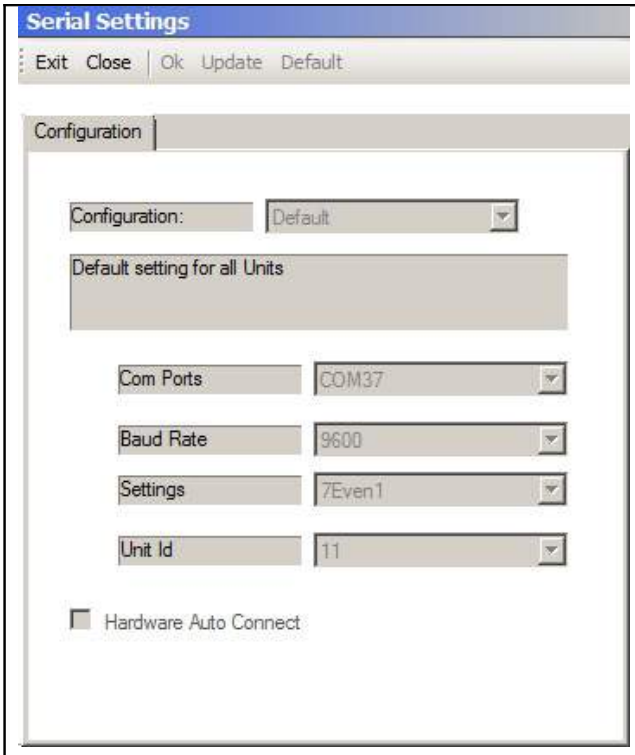



**Figure 33 - Serial Configuration: COM port is open**

Changes in the settings are disabled.

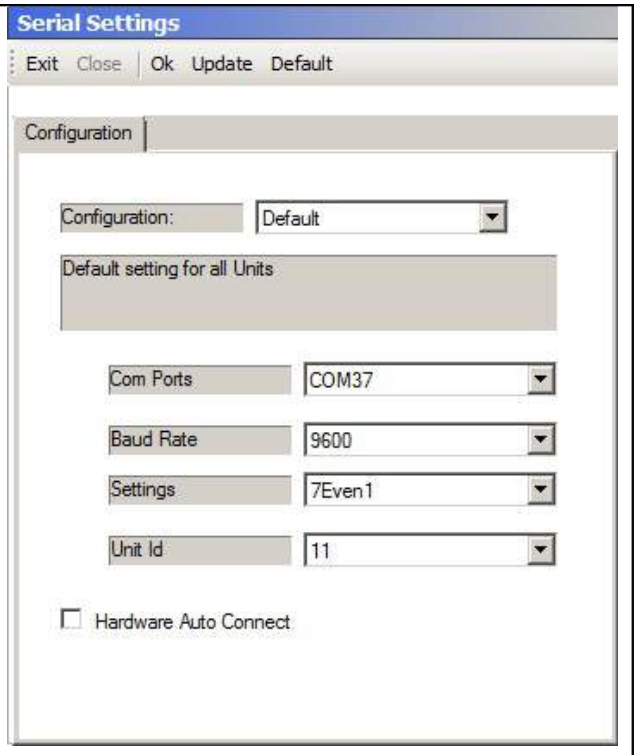



**Figure 34 - Serial Configuration: COM port is closed**

Changes in the settings are enabled.

**WARNING**

When a unit is connected, by closing the COM port you will always abort the connection.

A "Connection lost..." warning message will appear (see on page 36).

If the COM port is closed, additional features are available:

| Buttons | Menu | Notes |
|---|---|---|
| Ok | Ok Ctrl+Shift+O | **Transfers** the edited COM port settings and closes the configuration window automatically. After closing, the OS10.0 immediately tries to connect to a device. |
| Update | Update com port list Ctrl+Shift+U | **Updates** the COM port list. In case of a new COM port available in the PC, the list can be updated by clicking the **UPDATE** button. |
| Default | Set default values Ctrl+Shift+D | **Resets** baud rate, settings, and unit number back to the factory (default) settings. |

### 2.3 Selection of the configuration

Four configurations are currently available:

| Name | Device | Baud Rate | Settings |
|---|---|---|---|
| Default | Standard device | 9600, 4800, 2400, 1200, 600, 19200, 38400 | 7Even1, 7Even2, 7Odd1, 7Odd2, 7None1, 7None2, 8Even1, 8Odd1, 8None1, 8None2 |
| LD series | LD210, LD220<br>LD350, LD355<br>LD360, LD365 | 9600, 19200, 38400 | 7Even1, 7Even2, 7Odd1, 7Odd2, 7None1, 7None2, 8Even1, 8Odd1, 8None1, 8None2 |
| IF series | IF40, IF41, IF42 | 9600, 19200, 38400 | 7Even1, 7Even2, 7Odd1, 7Odd2, 7None1, 7None2, 8Even1, 8Odd1, 8None1, 8None2 |
| IFS-10 series | IFS-10 | 9600, 4800, 2400, 1200, 600, 19200, 38400, 56000, 57200, 76800, 115200 | 7Even1, 7Even2, 7Odd1, 7Odd2, 7None1, 7None2, 8Even1, 8Odd1, 8None1, 8None2 |

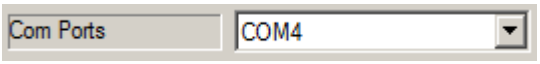
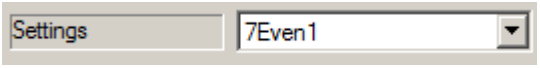
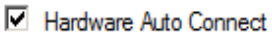
If a device connected to the serial port is detected, the corresponding configuration is selected automatically and entered into the corresponding operating elements.

**NOTE**
The IFS-10 unit offers an extended baud rate range.

## 2.4 Operating elements

The selection of the serial COM port as well as the configuration of the required settings are made by means of the control elements **Com Ports**, **Baud Rate**, and **Settings**. In addition, the **Unit Id** item allows to assign a unit number to the connected device. The **Hardware Auto Connect** checkbox allows the automatic detection of the "serial to USB" converters. For more information on this special feature see here below.

Overview of all control elements:

| Configuration controls | Notes |
|---|---|
|  | List of all connected (and activated) COM ports (COM1, COM4, etc.) |
| | List of all allowed baud rates.<br>Default setting: 9600 |
|  | List of all allowed serial settings.<br>Default setting: 7Even1 |
| | List of all allowed unit numbers (addresses).<br>Default setting: 11 |
|  | Auto detection of the "serial to USB" converters, see the next section.<br>Default setting: not active |

### 2.4.1 Hardware Auto Connect

When the **Hardware Auto Connect** checkbox is selected, the OS10.0 detects automatically when a new IFS-10 device is connected to or removed from the same USB port. The Com Port number for this (new) device will be the same as the port number of the previously connected device. Then the OS10.0 will immediately connect to this (new) device and automatically begin downloading all necessary data from the device.

**WARNING**
It is compulsory to ALWAYS use the same USB port (even if the connection is via a USB hub).

If the option is not selected, the connection must be done by means of the Configuration tool or has to be initiated via serial interface. The current state will be shown in the status bar (see the next page).

### 2.5 Status information

All important information about the COM port is indicated in the status bar (see the Figure below):

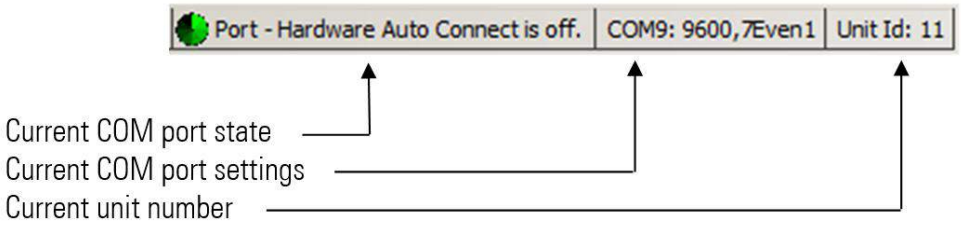



**Figure 35 - Serial Configuration: Status bar / COM port information**

#### 2.5.1 Current COM port status

The current COM port status indicates the operating status of the serial interface and the condition of the **Hardware Auto Connect** feature (see the previous page).

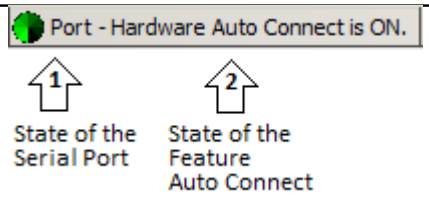



**Figure 36 - Serial Configuration: Current COM Port Status**

1. (left): the current state of the serial interface is shown as an icon. The table in the next "2.5.1.1 COM port status (1)" section shows all different states and their meaning.
2. (right): it explains the current state of the **Hardware Auto Connect** feature (see the table in the "2.5.1.2 Hardware Auto Connect (2)" section hereafter)

#### 2.5.1.1 COM port status (1)

The serial interface has four different states: Down, Close, TryOpen, and Working.

| Icon | Status | Meaning | Tool Tip Text |
|---|---|---|---|
| | Down | The serial interface does not work.<br><br>**Reason**: either the serial interface has been removed or no interface is connected. | "Device is down ..." |
| | Close | The serial interface is closed. | "Device is closed ..." |
| | TryOpen | The OS10.0 tries to open the selected interface.<br><br>**Remark**: This can take up to 3-5 seconds, depending on the "serial to USB" converter. | "Try to open the selected Device ..." |
| | Working | The interface is working correctly. | "Device is working ..." |

When you remove the interface, the COM port state is automatically set back to DOWN.

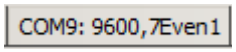
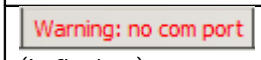
### 2.5.1.2 Hardware Auto Connect (2)

Regardless of the COM port state, the current setting of the **Hardware Auto Connect** option is displayed.

| Status display | Meaning |
|---|---|
| | **Hardware Auto Connect** is selected, i.e. it is enabled |
| | **Hardware Auto Connect** is not selected, i.e. it is disabled |

### 2.5.1.3 Current COM port settings

This status bar shows the current COM port settings as well as the "**Warning: no com port selected**" and "**Warning: no com port available**" warning messages.

| Status bar info | Meaning |
|---|---|
|  | The COM port is connected and in use |
| | No COM port is selected, but one at least is connected |
|  (it flashes) | No COM port is available |

### 2.5.1.4 Current Unit Number

The last item shows the unit number that is used currently.

| Status bar info | Meaning |
|---|---|
| | Current unit number |

# 3 – File 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 either as a "stand-alone" editor (i.e. without a connected unit) or in combination with a unit which is connected through the COM port.

The editor can be used:

- as a stand-alone editor:
  - to load and save parameter data sets;
  - to edit parameter data sets;
  - to prevent changes in the parameter data sets ("Write Protected");
  - to print parameter data sets;
- in combination with a connected device:
  - to save device parameter data sets to files;
  - to select and switch freely the available parameters in the parameter list.

The editor is located in the left half of the screen. The right half of the screen shows an OS10.0 window:

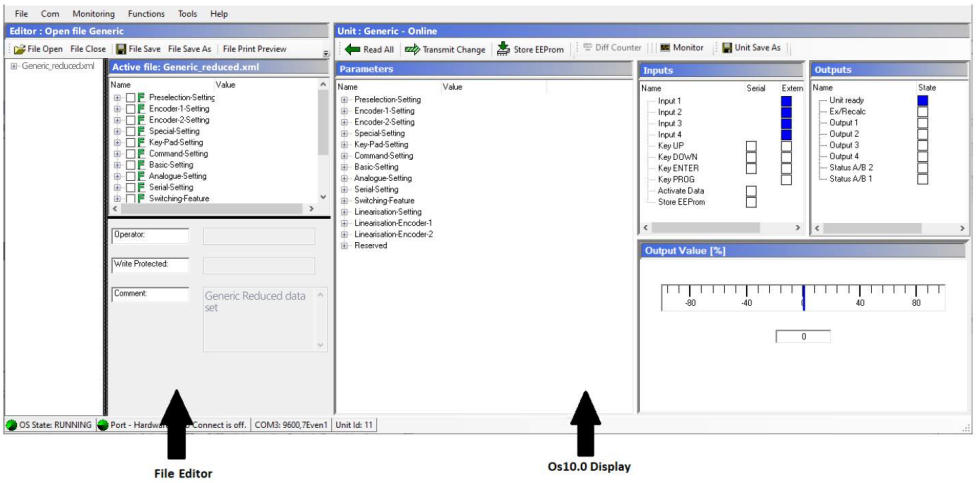



**Figure 37 - File Editor: Parameter list with reduced parameters**

### 3.1 Opening the File Editor

| | |
|---|---|
| Stand-alone | The **File-Open Editor** must be opened to edit an existing parameter data file. An **Open file** dialog appears and the desired parameter file can be selected. |
| Combined | In combination with a connected unit, the editor is used to backup the current parameter data sets.<br><br>Two cases are possible:<br>1. A parameter data set has to be saved to a file.<br>The backup starts when you press the **Unit Save as** button.<br>2. The serial connection to the device is stopped (see the "1.7 Exception: Connection lost ..." section on page 36). |

### 3.2 Operation of the editor

For the general operation of the Editor a button or a menu bar and a pop-up menu are available (see also the Figure in the next page).

Information on the file that is loaded currently can be found in the **File information** window.

The currently loaded parameter data set can be modified in the **List of parameters** window.

The "Input field" is used to save the current parameter data set to a file. Saving can be done with or without "Write Protected" option.

**NOTE**
A parameter data set that is marked with "Write Protected" (by using the File Editor):

- CANNOT be changed ("read-only");
- CANNOT be saved in an existing file ("write protection").

The following three Figures show the single operation elements:

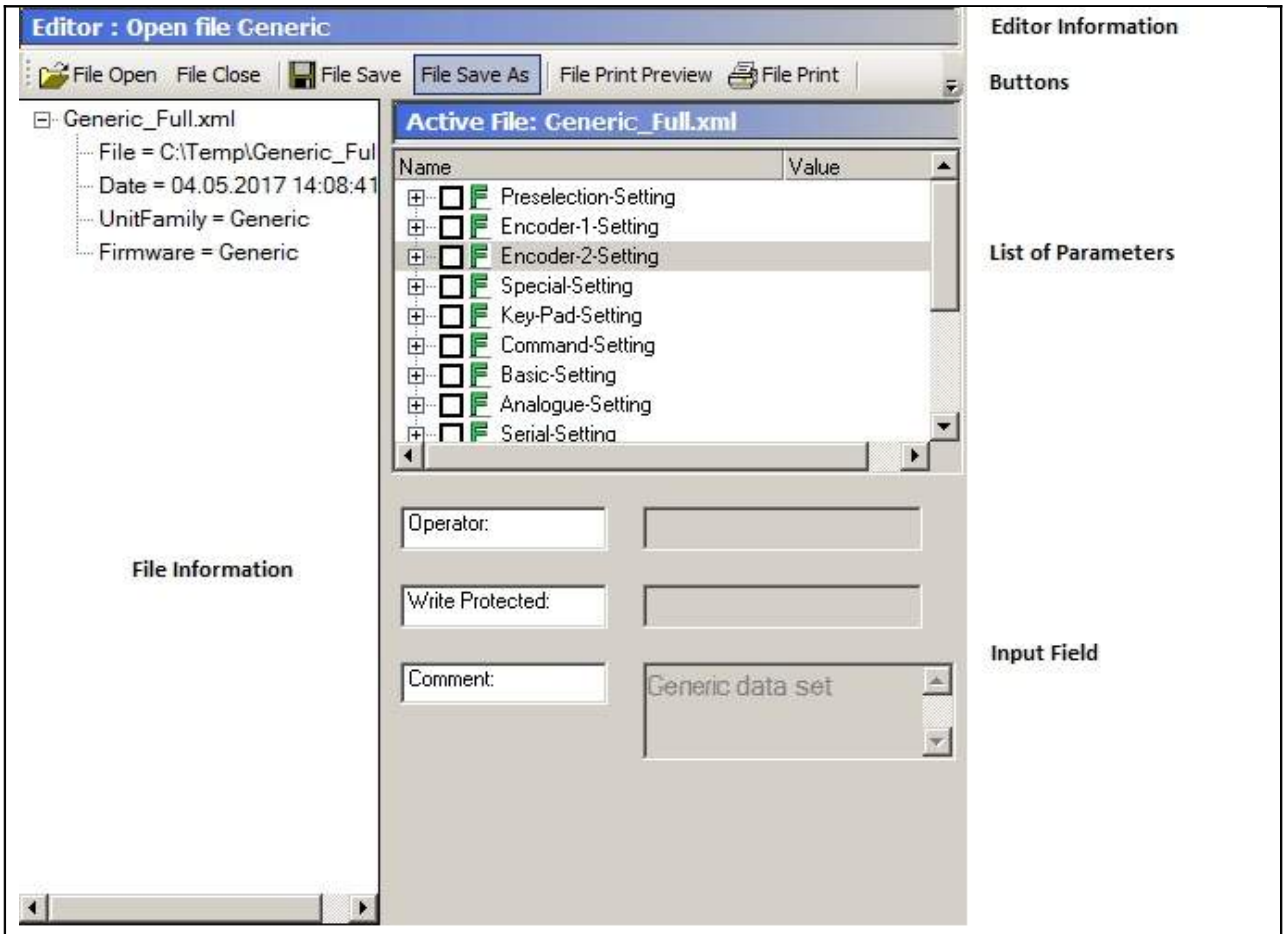



Figure 38 - File Editor: Components

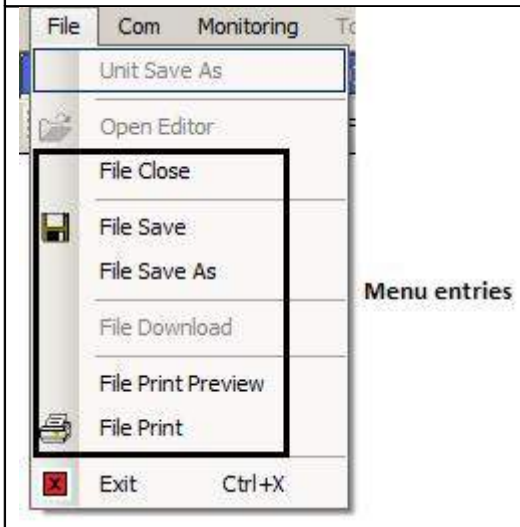



Figure 39 - File Editor: Menu

Figure 40 - File Editor: Pop-up menu

### 3.2.1 Operating elements (commands) of the editor

The available operation elements (commands) are described in the following table.

| Command | Description | Additional Notes |
|---|---|---|
| **File Open** | It opens a new data file.<br>The software is able to process the former **.par format files** as well as the newer **.xml format files**. The selection is made via file extension. | It overwrites the data file that is currently open in the editor. |
| **File Close** | It closes both the file and the editor. | **No saving** of the current data file is performed. The current data file is deleted automatically from the file editor. |
| **File Save** | It saves the current data file in the corresponding file. | **Restriction**: if "Write Protected" is selected, this command is not available and not visible. |
| **File Save As** | It saves the current data file with a user defined name. | The user's name entry, setting the "Write Protected" feature and a comment about the file, can be added here.<br>**Restriction**: if "Write Protected" is selected, the overwriting of existing files is not allowed. |
| **File Print Preview** | It creates a preview of the file that is currently open. | Only usable with an installed printer! |
| **Print** | The open file will be printed out. | Only usable with an installed printer! |
| **File Download** | It copies the current file into the OS10.0 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. |

### 3.2.2 Loading a new parameter data set from a file

A new parameter data set can be loaded from a file using the **File Open** command.
After selecting the **File Open** command, a choice menu opens automatically and the desired parameter file can be selected and loaded.

The editor automatically recognizes whether a data set with or without "Write Protected" exists (see the examples below).

Data set without "Write Protected":

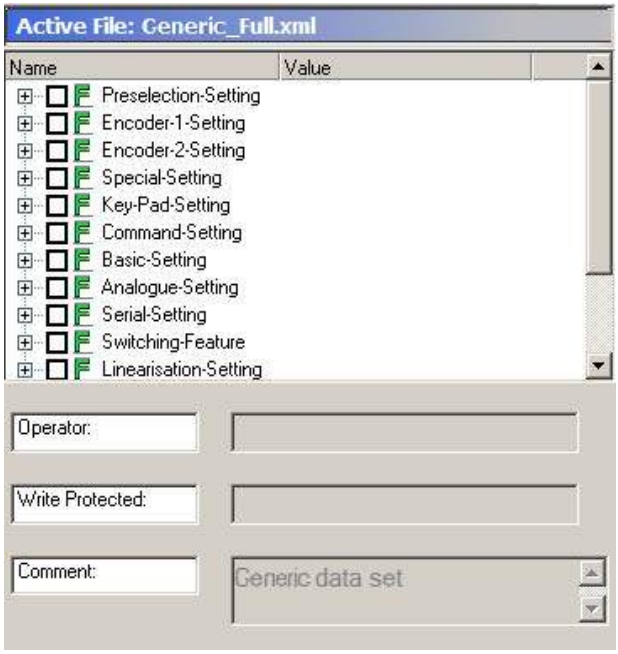



**Figure 41 - File editor: parameter data set without "Write Protected" - Example**

Data set with "Write Protected":

**Figure 42 - File editor: parameter data set with "Write Protected" - Example**

If the "Write Protected" function is active, all blocked features are disabled.

### 3.2.3 Editing parameter data sets

The individual parameter values can be edited in the **List of parameters** editing window.
In addition, the user can select individual menus/parameters.
The selection of the displayed menus/parameters can be suitably adjusted for the parameter list of OS10.0 with "Write Protected".

#### 3.2.3.1 Edit parameter data sets

The editing of the parameter values is the same as the editing of the parameter list of the OS10.0 window (see also the "1.3.1.1 Editing a parameter value" section on page 12). However, the parameters that are changed are not marked.

#### 3.2.3.2 Selection of the displayed parameter values or menus

In the editing window, two symbols are used (see the table below).

| Symbol | Description |
|---|---|
| ☐ F | Free switched: the menu or the parameter is displayed. |
| ☑ B | Blocked: the menu or parameter is blocked and not displayed. |

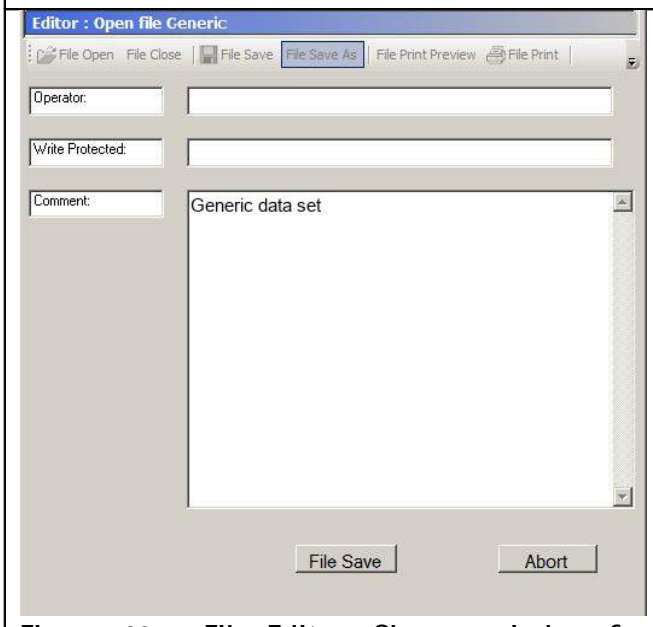
The selection "Free switched <-> Blocked" is done by selecting the box next to the letter.
A menu entry changes all subordinated parameter entries.

### 3.2.4 Saving a parameter data set

Two methods are available to save a parameter data set.

1. **File Save** command
   By means of the **File Save** command the current parameter set is automatically saved to the corresponding data file. The file name and location are shown in the file information.
   - A change in the file name or location is not possible.
   - A change in the optional parameters "**Operator**", "**Write Protected**", and "**Comment**" is not possible.
   - All entries in this file will be overwritten.
   - This option exists only if "Write Protected" is not already selected in a previous saving operation.

2. **File Save As** command
   By means of the **File Save as** command the current parameter set can be saved to any data file.
   After pressing the **File Save As** command one of the following parameter change windows will open.

| Condition(s):<br>If a file without "Write Protected" or no file is loaded in the editor, the change window without "Write Protected" will open. | Condition:<br>If a file with "Write Protected" is loaded in the editor, the change window with "Write Protected" will open. |
|---|---|
|  | |
| **Figure 43 - File Editor: Change window for optional parameters (without "Write Protected")** | **Figure 44 - File Editor: Change window for optional parameters (with "Write Protected")** |

**Please note the following remarks:**

By pressing the **File save** button you will open a file dialog box. The saving procedure is the same as under Windows operating system. Only after the store operation is carried out, a superior write protection is enabled and the file editor changes according to the new condition.

<table>
<tr><th>Optional parameters</th><th>Description</th></tr>
<tr><td>Operator</td><td>Name of the operator<br>Changing this parameter is always allowed.</td></tr>
<tr><td>Write Protected</td><td>Indicator for write protection<br>A change in this parameter is subjected to the following limitations:<br>A set and saved “Write Protected“ cannot be changed via file editor.<br><br>Setting of “Write Protected“:<br><br>
<table>
<tr><th>Text</th><th>Meaning</th></tr>
<tr><td>“active“</td><td>write protection is enabled</td></tr>
<tr><td>all other texts</td><td>write protection is disabled</td></tr>
</table>
<br>The write protection is enabled as soon as the saving operation is carried out</td></tr>
<tr><td>Comment</td><td>Any comment<br>Changing this parameter is always allowed.</td></tr>
</table>

- For parameter data sets without "Write Protected" the overwriting of existing files is allowed.
- For parameter data sets with "Write Protected" the overwriting of existing files is not allowed and is blocked automatically. The parameter data sets must be saved to a new file.
- All entries in the file are completely created as new or overwritten.

By pressing the **Abort** button, the operation can be terminated at any time without saving.

### 3.2.5 Printing parameter data sets

Two ways are available in order to print the parameter sets.

**File Print Preview** command (Print Preview)
A print preview window opens after pressing the **File Print Preview** command. In this window, the print can be checked visually. A selection of the print features is not possible.

**File Print** command (Immediate printing)
After pressing the **File Print** command the Windows standard printer selection window opens. In addition to the selection of the printer a printer-specific selection is also possible.

## 3.3 Data Exchange between File Editor and OS10.0 Window

### 3.3.1 File Editor → OS10.0 Window

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

| Compatibility conditions of the file downloads | |
|---|---|
| **1. Unit family** | The first five characters of the unit family and the loaded parameter set must be exactly the same. The characters are not case-sensitive. |
| **2. Firmware** | **a.) Standard Firmware**<br>The first seven characters of the firmware and the loaded parameter set must be exactly the same. The characters are not case-sensitive.<br>**b.) Special Firmware**<br>All characters of the firmware, editor file, and loaded parameter set must be exactly the same. |

In case the compatibility conditions are not fulfilled, the **File Download** button is greyed out automatically (see the example below). In the Figure below the first 7 characters do not match:

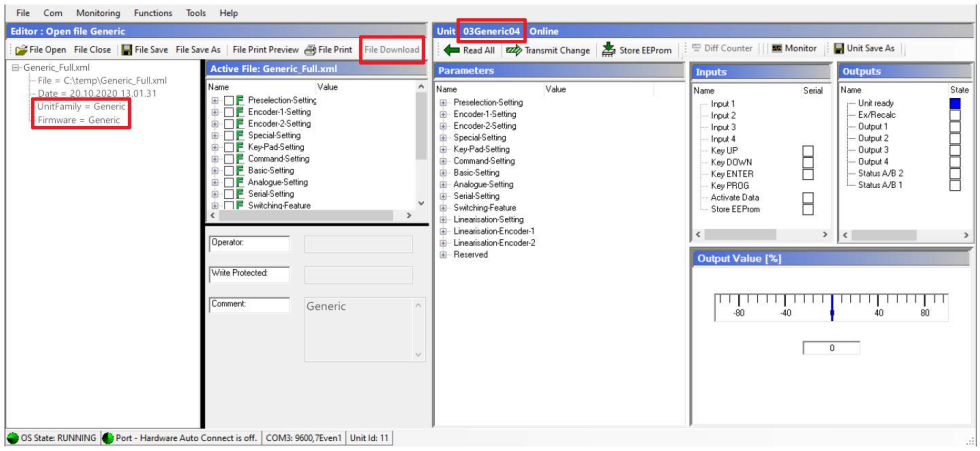



**Figure 45 - File Editor: Data Exchange not allowed**

If the compatibility conditions are met, the following sequence is executed after pressing the **Download File** button.

- For data sets without "Write Protected", only "free switched" parameters or menus are transmitted to the OS10.0 window. Only the "free switched" parameters will be overwritten afterwards and automatically highlighted in **red** in the OS10.0 window. Blocked parameters are not displayed (see the Figure below).

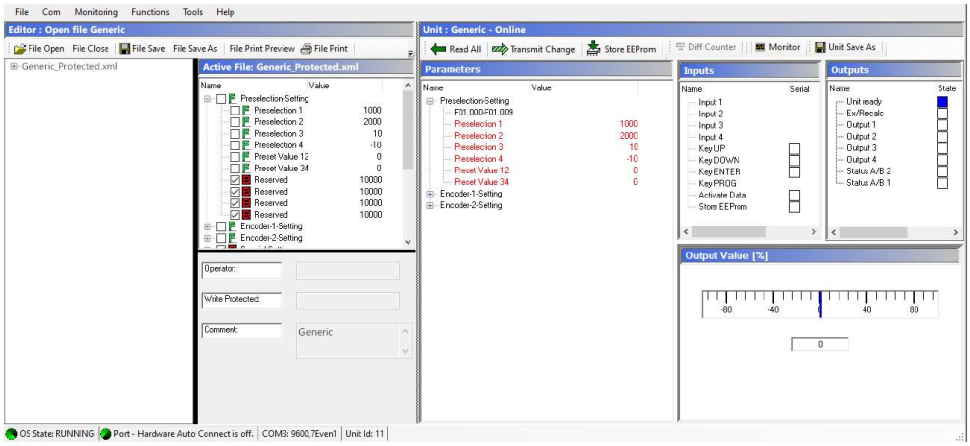



**Figure 46 - File Editor: Data exchange for data sets without "Write Protected"**

- For data sets with "Write Protected", only the visible parameters or menus are transmitted to the OS10.0 window. Then only the visible parameters will be overwritten and automatically highlighted in **red** in the OS10.0 window. Blocked parameters are not displayed (see the Figure below).

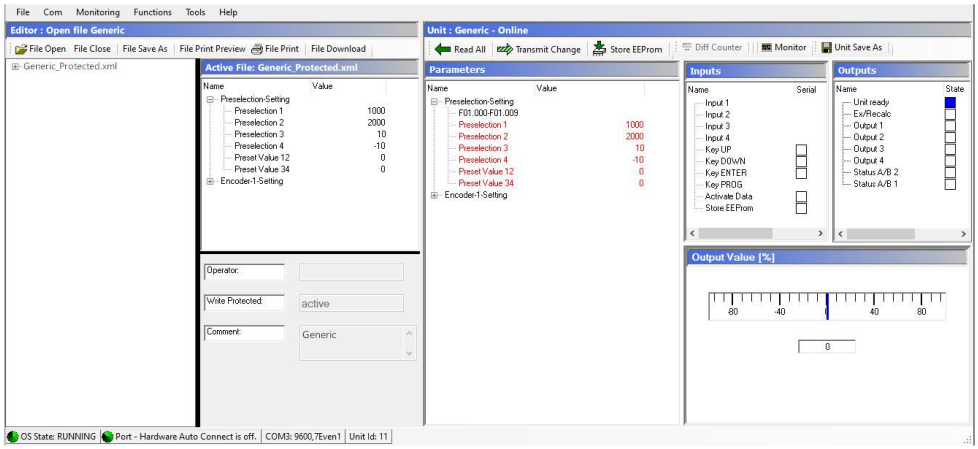


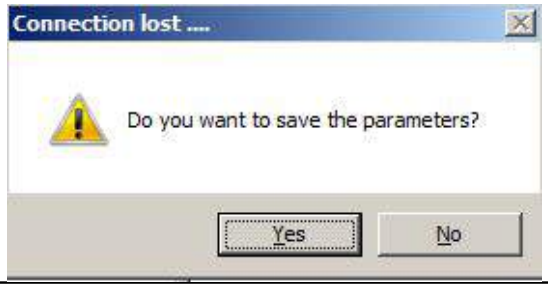

**Figure 47 - File Editor: Data exchange for data sets with "Write Protected"**

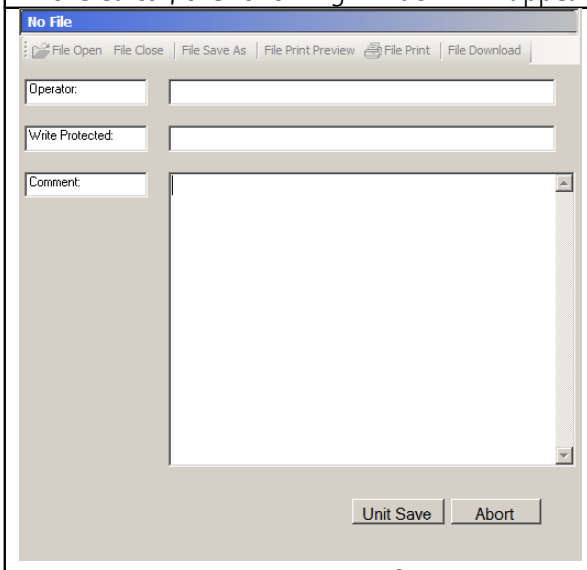
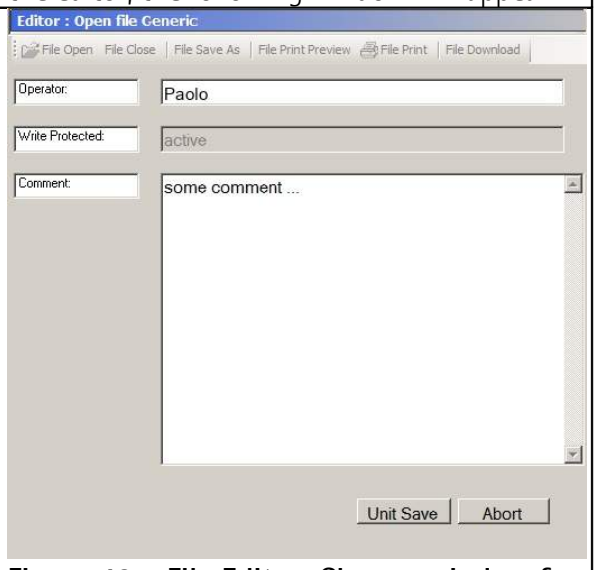
Now all **new parameters** can be transmitted to the target unit.

### 3.3.2 OS10.0 Window → File Editor

**NOTE**
All parameters of the OS10.0 window (also the blocked parameters) will be added to the file editor.

There are two possibilities to transfer data from the OS10.0 window to the editor.

| Active possibility | Passive possibility |
|---|---|
| Press the **Unit Save As** button<br> | **Connection lost ...** is detected.<br>When the connection between the OS10.0 program and the target unit is lost, the exception **Connection lost ...** is activated automatically.<br>The following pop-up warning message will appear:<br>  |
| After pressing the **Unit Save As** button... | After pressing the **Yes** button... |
| ... the editor input field opens left beside the OS10.0 field. | |

| If a file without "Write Protected" or no file is opened in the editor, the following window will appear: | If a file with "Write Protected" is opened in the editor, the following window will appear: |
|---|---|
|  |  |
| **Figure 48 - File Editor: Change window for optional parameters (without "Write Protected")** | **Figure 49 - File Editor: Change window for optional parameters (with "Write Protected")** |

The procedure for saving the parameters is described in the "3.2.4 Saving a parameter data set" section on page 51.

# 4 - Tools menu

**NOTE**
The tool menu is used to provide additional (external) tools and is only available in special versions of the OS10.0.

# 5 - Help menu

The Help menu summarizes all help or update options available for OS10.0.

The Help main menu is divided into two areas. An upper area with the two commands **Show help** and **Web Page**; and a bottom area in which all the updates of the OS10.0 are summarized. The upper menus are shown just below. Each update procedure is explained in the next sections.

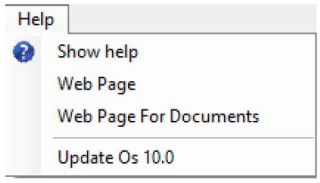



**Figure 50 - Help menu, overview**

**NOTE**
The following note applies to all update procedures: regardless of the update method, for security reasons the OS10.0 will be closed and restarted after the execution of the update.

When you press the **Show Help** command the current documentation directory will open automatically.

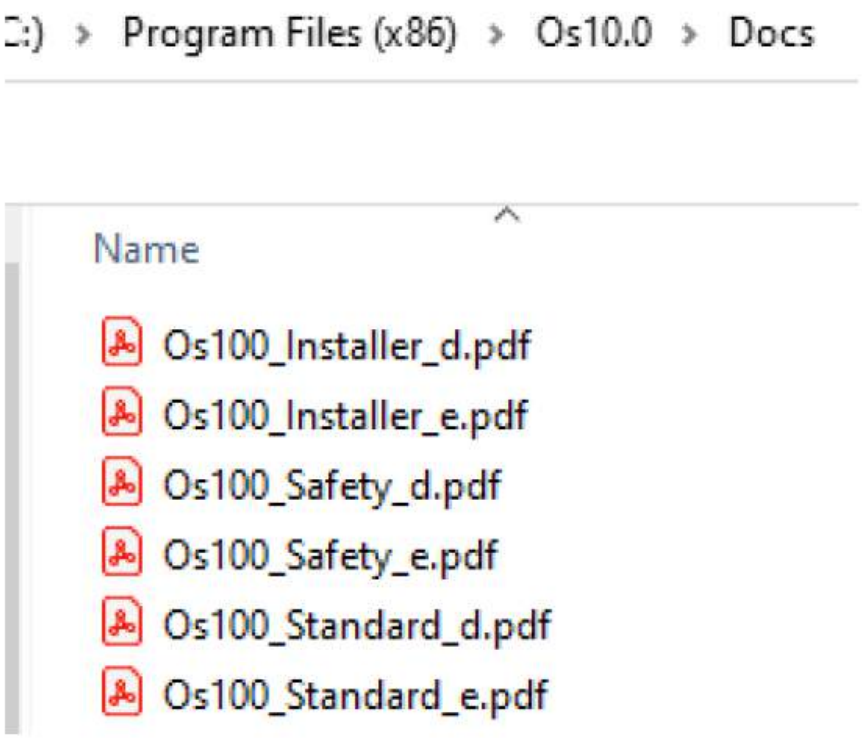



**Figure 51 - Current Documentation Directory**

The number of manuals displayed in the list is variable and depends on the existing documents. Double-click the icon of the desired manual to open it.

**NOTE**
To open and view the PDF document a suitable PDF reader must be installed in the PC.

Press the **Web Page** command to open Lika's web page.
Press the **Web Page For Documents** command to automatically open Lika's web page with additional documents.

## 5.1 Updating the OS10.0

Press the **Update OS10.0** command to start the update of the OS10.0. The update process consists of the steps described hereafter.

### 5.1.1 Automatic update check

First of all, the update program checks whether a new update is available.
Two different cases can occur:
Case 1: no update is available
Case 2: a new update is available

**Case 1: no update is available**

Press the **OK** button to close the window and return to the OS10.0. Check later whether an update is available.

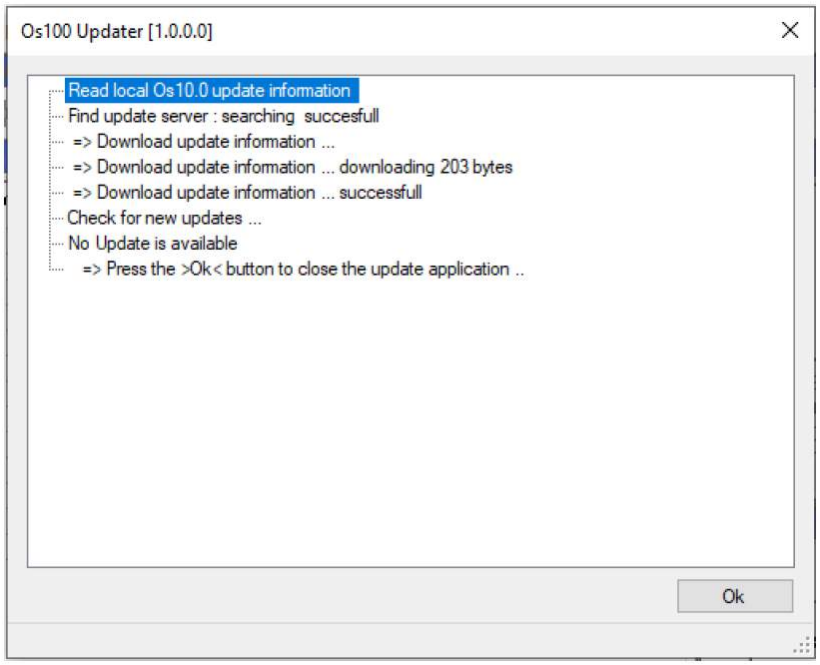



**Figure 52 - Update OS10.0 - No Update is available**

**Case 2: a new update is available**

The update can be either installed or aborted, according to needs.

Press the **NO** button to close the update program and start the OS10.0 automatically.

The update can be started later again.

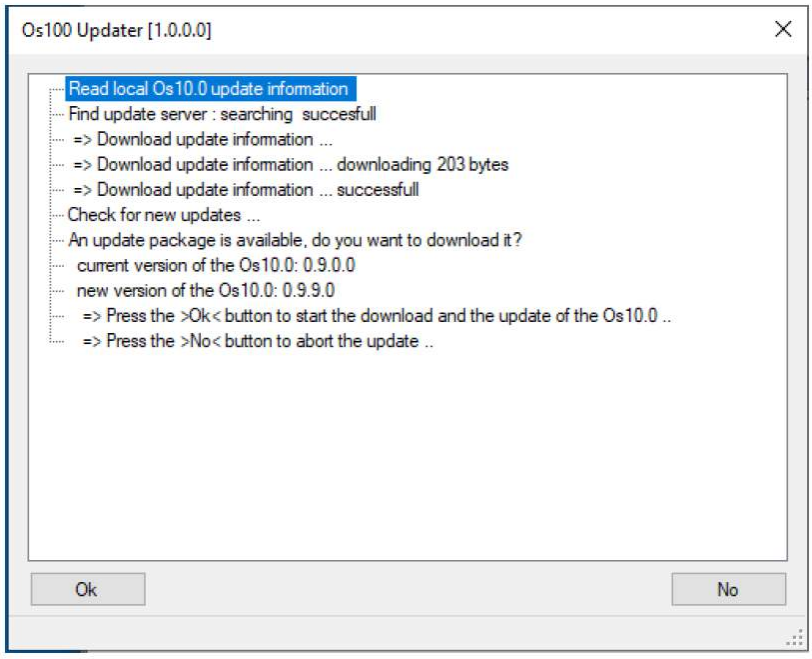



**Figure 53 - Update OS10.0 - Update available**

Press the **OK** button to start the download and update the program to the new version.

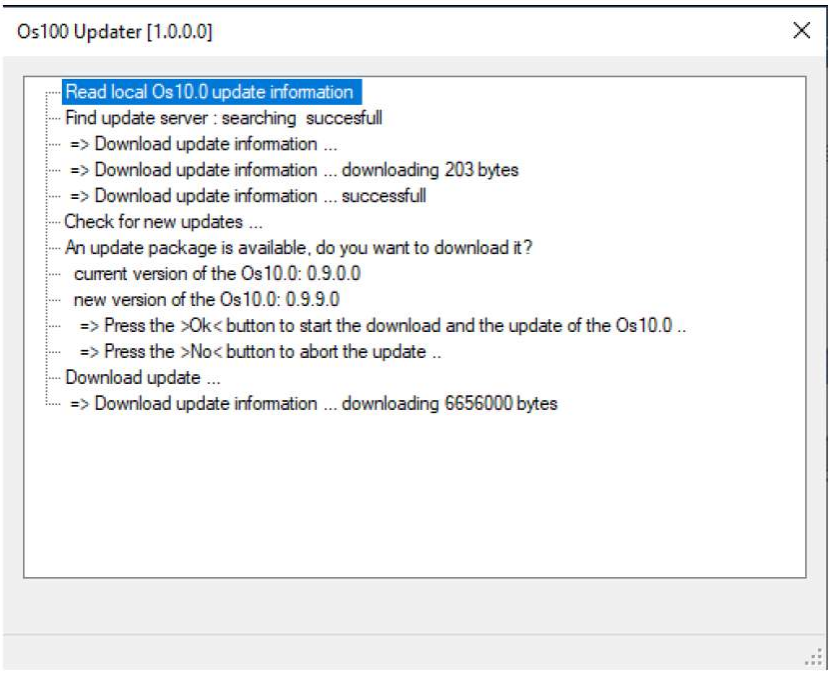



**Figure 54 - Update OS10.0 - Download the update**

### 5.1.2 Updating the OS10.0 to a new version

The update process and the installation process are exactly the same.
Please find complete information about the installation process in the "MAN OS10.0 Installer E x.x.pdf" document.

# 6 – Appendix

## 6.1 Literature

[1] User's guide of the OS10.0 tool
[2] User's guide of the specific device, download it from **www.lika.biz**
[3] System requirements for .NET Framework:
**https://docs.microsoft.com/en-us/dotnet/framework/get-started/system-requirements?redirectedfrom=MSDN**

## 6.2 Special cases

| # | Special cases | Notice |
|---|---|---|
| 1 | Parameter **UnitId** | Only specific values are allowed for this parameter. Detailed information can be found in the "User's guide" of the device. |

## 6.3 System requirements

| Operating system | Windows 7, Windows 8, Windows 10 |
|---|---|
| Hardware | • 1 GHz processor or higher, 32 Bit (x86) or 64 Bit (x64)<br>• 2 GB RAM (32 or 64 Bit)<br>• hard disc free available space:<br>16 GB for 32 Bit<br>20 GB for 64 Bit<br>• DirectX 9 graphic engine with WDDM 1.0 driver or higher<br>• Serial device (standard COM port or RS-232 via USB adapter) |
| Software | • .NET Framework 4.6.1 from Microsoft |

| Document release | Release date | Description | Version | Software |
|---|---|---|---|---|
| 1.0 | 18.03.2022 | First issue | **01a_oi** | **1.1.8.6** |

Dispose separately

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