

# User Manual SmartControl 1.4

This document describes the Modifications and Functions which are newly introduced in the Software SmartControl 1.4

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1. Multi TCP/IP On- and Offline
2. Candisplay
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## 1. Multi TCP/IP On- and Offline

The existing functionality of the TCP/IP connection is extended in a way, that configured IP addresses in the system table, could be used in the online as well as in the offline mode. The communication layer was extended so that for each system table, a communication component could be assigned, if configured for this purpose. In case a system table has no configuration for the possible connection, the chosen connection type under Set/Serial Interface will be used. For the configuration of the connection type the respective functionality in the SmartControl must be activated.

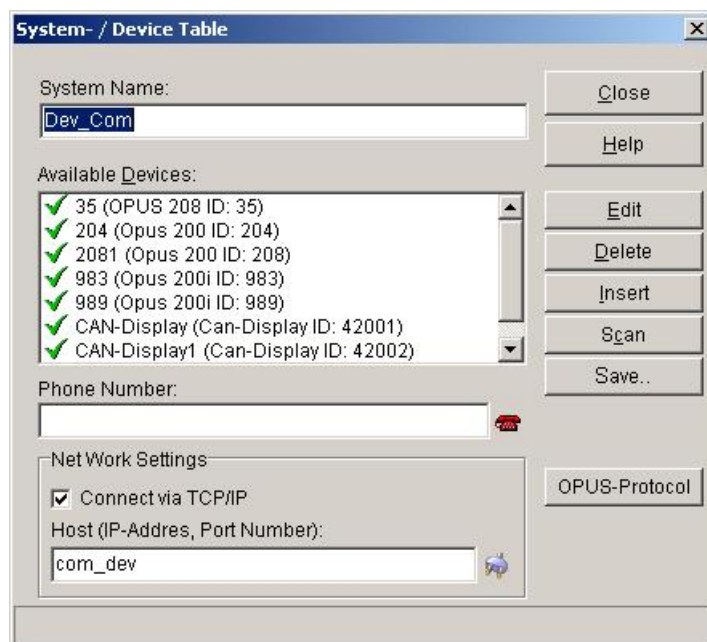


Fig 1: System table with configured TCP/IP-connection

A configured TCP/IP connection is used preferably. If the system table contains a phone number (meaning, in the standard configuration Set/Serial Interface, a modem connection was chosen) and a TCP-IP address, a connection for this system table via TCP/IP will be established. In case a system table does not contain a phone number for the modem connection and no IP address, a phone number will be asked before connecting. Configured connection type here has to be a modem.

If the communication type under Set/Serial interface is set to modem and all system tables are set to connect via TCP/IP, the modem connection will not open. The communication will be established via TCP/IP.

- The following connection types are possible:
- 1\*serial, several TCP/IP connections
- 1\*Modem, several TCP/IP connections
- Several TCP/IP connections
- Several modem and TCP/IP connections (several modem connections offline only)
- Several modem connections (offline only)

Unnecessary connections will not be opened by the software.

To activate the TCP/IP connection of the system table, you must enter in the field host a valid object address. The entry contains IP address and port number of the desired host and has the format XXX.XXX.XXX.XXX,YYYY, whereby XXX is the IP address and YYYY is the port number of the host. Both parts of the address are separated by a comma. If the port number is omitted, the port number 8000 will be used as standard.

A symbolic name could as well be used as alternative to the host address. This should however be known by the system (a respective entry in the file (%windir%)\System32\Drivers\Etc\hosts must exist).

To test the host connection, you may use the key beside the entry line.

All kinds of measuring data recording (online or offline) is based on system table. If devices are available but not assigned to a system table, they will not be used in the recording process. This makes it possible to take out devices temporarily from the measuring process if necessary. The channels and the measuring data of these devices still exist unless completely deleted. These excluded channels will not be shown while selecting channels for display or for deleting memory. A hint appears, if you close the measurement setup with deactivated devices.

## 2. Candisplay

For the newly developed device Candisplay, the software is extended to identifying, recording and writing of the E<sup>2</sup>, and to manual and automatic configuration. A Candisplay contains no measuring channel.

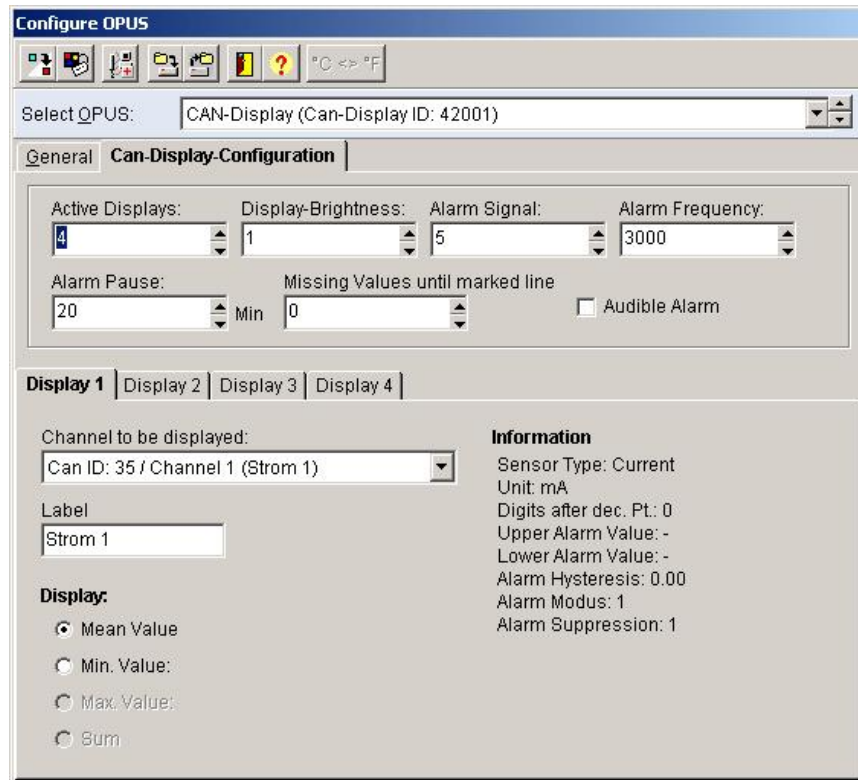


Fig 2: Configuration Candisplay

### Configuration:

Next to the general parameter register is the register Candisplay Configuration, where specific parameters of the Candisplay may be set.

#### Active Display Channel:

The Candisplay can display between 0 to 4 measuring values.

Here, you may chose the number of measuring values to be displayed.

The number of measuring values set to be displayed corresponds to the number of displays activated e.g. "Display 1" until "Display 4".

#### Display Brightness:

You may set here the display brightness ranging from level 1 (dark) to level 4 (bright).

#### Alarm Signal:

Candisplay alarms in 5 different alarm frequencies (1-5). You may chose here which alarm frequency is to be used.

**Alarm frequency:**

You may set the alarm frequency between 500 and 3000 Hertz. This chosen frequency will be shown in the field alarm signal.

**Alarm pause:**

After acknowledging the alarm you may set here the alarm pause using the key of the candisplay. You may set values minutewise between 1 min and 20 minutes.

**Measuring value gap until line:**

Upon finishing your online measurement, you may now configure at which time your measuring values will be indicated as a line (based on the memory rate of the channels to be displayed). The values to be set may range between 0 and 255 saving rate. For example: If the memory rate of a channel to be displayed is 1 min. and the measuring process was stopped, the last measured value will be indicated for 255 minutes.

**Audible Alarm:**

Via check box " Audible Alarm", you may switch the audible alarm of the candisplay ON or OFF. If the audible alarm was switched OFF and an alarm exist, the deactivated audible alarm will not send a signal. However, other alarm possibilities of the candisplay remain active (blinking) and will signal alarm.

**Display 1 until Display 4**

In the "Channels to be displayed", all active channels of a system table are listed. If you chose a channel, the parameters of the display with the corresponding parameters of the channel will be configured. In the "Label", you may enter and edit the first 16 characters of your channel description . In "Display by", you may configure which value (Mean, Min, Max or Sum) of the channels should be displayed. The selection is however limited depending on the channel configuration. If the chosen channel measured only the mean value, this selection will be the only one active.

**Automatic Configuration:**

If changes in the configuration of Opus devices result in changes of candisplay configuration, these modifications will be automatically be set and programmed in the candisplay.

The candisplay will likewise be reconfigured if the channels to be displayed are inactivated or if Opus is taken out of the respective system table.

During joining of files the candisplay configuration will be scanned of necessary changes. The programming of candisplay could as well be left undone if the user desires it so.

### 3. Offline Alarm

In the Version 1.4, the SmartControl is extended so that alarms could be tracked down by reading memory and that alarms could be listed down and displayed. Alarm settings of the channels (alarm suppression etc.) will be taken into consideration during tracking down of alarms.

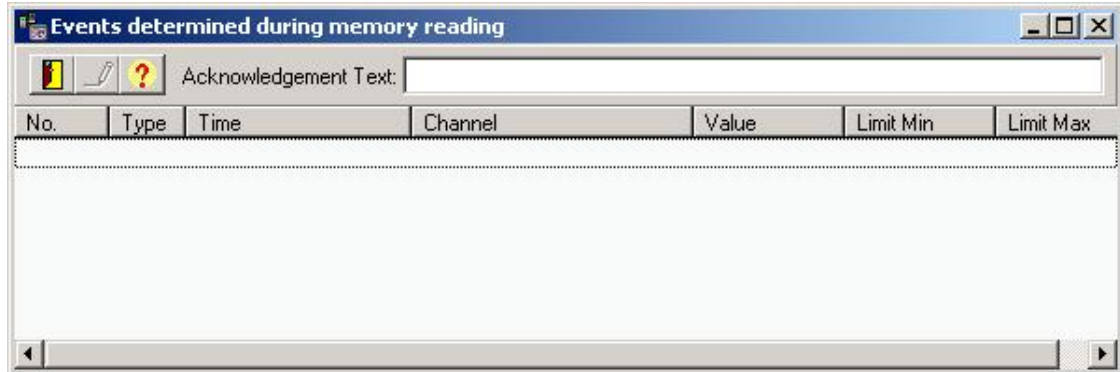


Fig. 3: List of alarms from memory reading

The shown list in Fig. 3 contains alarms which are determined by memory reading. Other "unacknowledge alarms" will not be shown in this list.

**Hint:** If you read the memory of the same period several times, the determined alarms will be listed down several times as well. Please remember this when reading memory. Should data reading be done several times, it is suggested to switch OFF alarm determination.

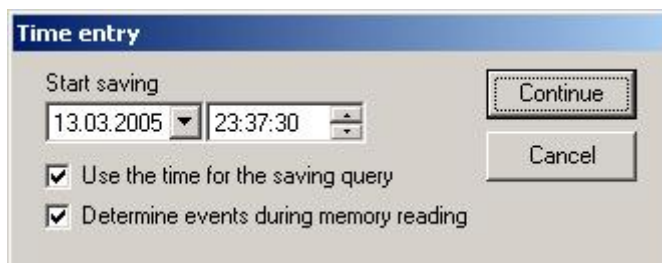


Fig. 4: Dialog time entries by manual memory reading

In reading memory manually, you may switch ON or OFF the function, determination of events by using the check box "determine event by reading memory".

You may likewise tick the check box ON or OFF in the dialog Options/System Settings in the menu "Events".

#### 4. Automatic Alarm Printout

The automatic alarm printout will be done on reaching default (user defined) values and includes a Single Channel Y/t Diagram and the corresponding Single Event Printout of that event.

The processing of the printouts is independent of the alerting on the screen and on the central actor as well as the acknowledgments of the alarms.

If an automatic processing should be done can be switched on and off with the checkbox "Automatic alarm print-out" in the dialog Options/Systemsettings.

If the whole eventprocessing is deactivated, then no alarm print-outs will be generated.

The rules for the processing are defined as:

The automatic alar Printout should be done, if a limiting value violation has occurred and the measuring value is again within the limits

**and**

the duration of the violation was longer than "Alarm Period" (4h)

**or**

the temperatur deviation was larger than "Delta-T" (5 °C) (since start of the violation)

**or**

the humidity deviation was larger than "Delta-H" (10 % rel.) (since start of the violation)

#### Configuration

Under Options/Systemsettings... the parameters for the processing could be changed as follows:

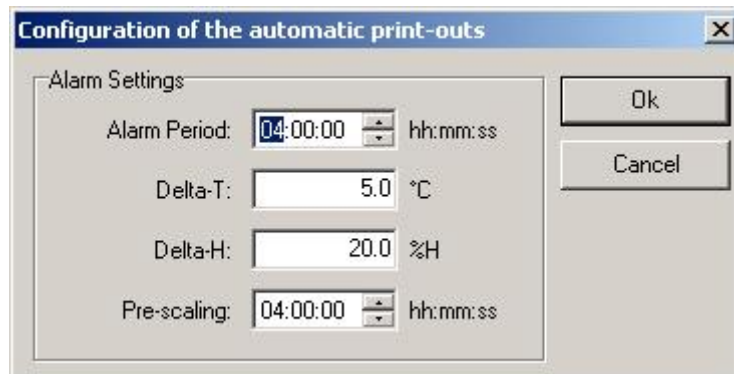


Fig 5: Configuration of the automatic alarm print-out.

#### Alarm Period:

You may enter here the minimum alarm period desired before the automatic printing process starts. The alarm period could be set secondwise and could be between 00 hours, 00 minutes, 00 seconds and 23 hours, 59 minutes 59 seconds. The pre-set values are 4 hours, 0 minutes and 0 second.

**Delta-T:**

A Delta-T may be pre-set for temperature channels. If the value is exceeded an alarm signal will be sent even if the alarm period is not exceeded. The pre-set value is 5.0 °C.

**Delta-H:**

A Delta-H may be pre-set for temperature channels. If the value is exceeded an alarm signal will be sent even if the alarm period is not exceeded. The pre-set value is 20.0 %rH.

**Pre-scaling:**

If an automatic alarm print-out is set, a diagram with the graph of the corresponding channel will be printed out. You may configure in this field at what time before the first alarm occurs should the diagram be scaled.

## 5. MKT Stability Report

The SmartControl is extended to calculating, indicating and printing-out the Mean Kinetic Temperature. The purpose of the MKT (Mean Kinetic Temperature) calculation is to assess the relevance of a short time temperature deviation for the product quality throughout the storage period.

To generate the MKT stability report, activate under Evaluation the menu item "MKT Stability Report".

The following dialog will guide you through report configuration:

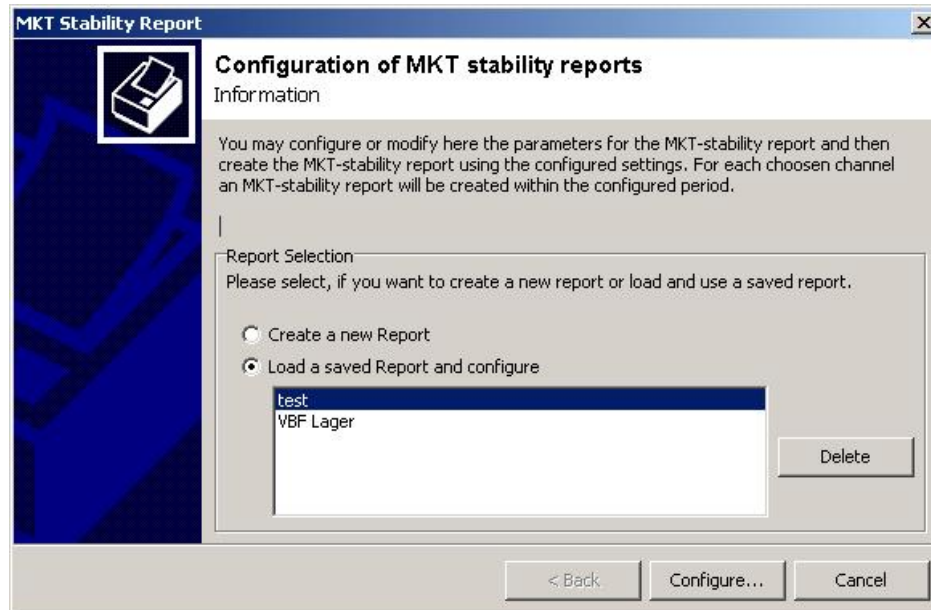


Fig. 6: Information und start MKT Stability Report configuration

Hint: To activate this dialog a file must be loaded. You may as well activate the dialog during online measurement. You may exit the configuration of the MKT stability report anytime using the "Cancel" key.

Aside from general information about MKT report, you have the possibility to load a saved report definition or generate a new definition. Select the key "Configuration" to start.



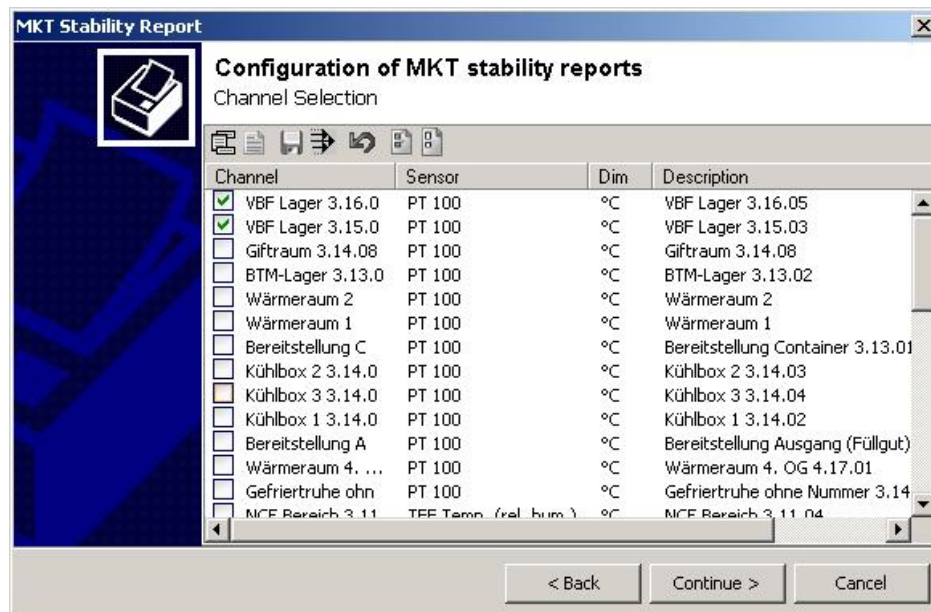


Fig. 7: Channel selection for the MKT Stability Report

The list shown contains all available temperature channels of the loaded file. Check-mark the channels which should be considered in the MKT report and then click the key, "Continue."

By clicking the column title ("Channel", "Sensor" etc.), you may change the sorting of the list.

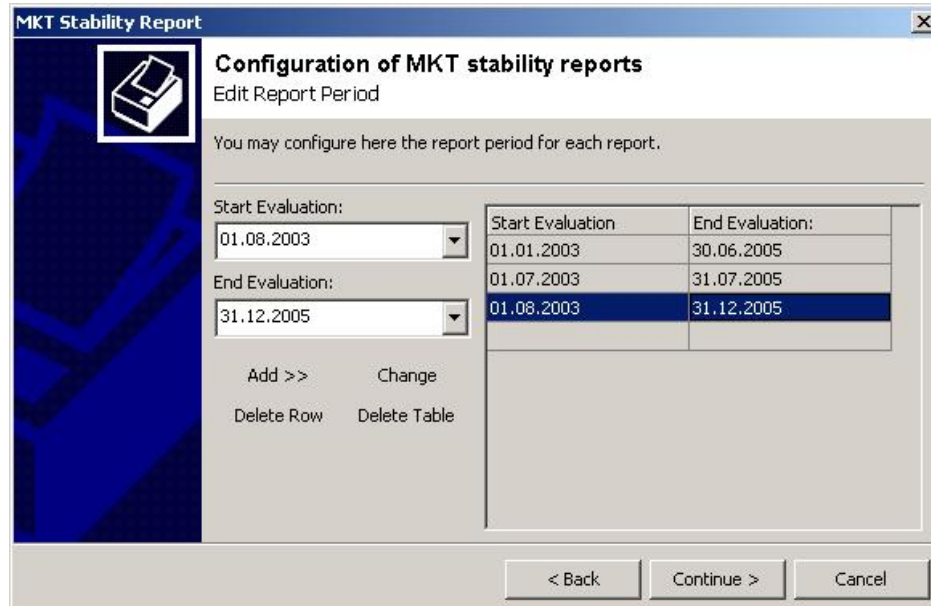


Fig. 8: Define Report Period for the MKT Stability Report

You may define here the report period of your MKT report. The list on the right side contains the defined period. To define a report period enter it on the left side then use the key "Insert >>" to put it in the list. You may enter as many period as you wish (also non-continuous).

Using the key "Delete Line", the marked line on the list will be deleted. Using the

key "Empty Table", the entire list will be deleted. Using the key "Change", the selected entry on the list will be overwritten with the actual data from the entry field.

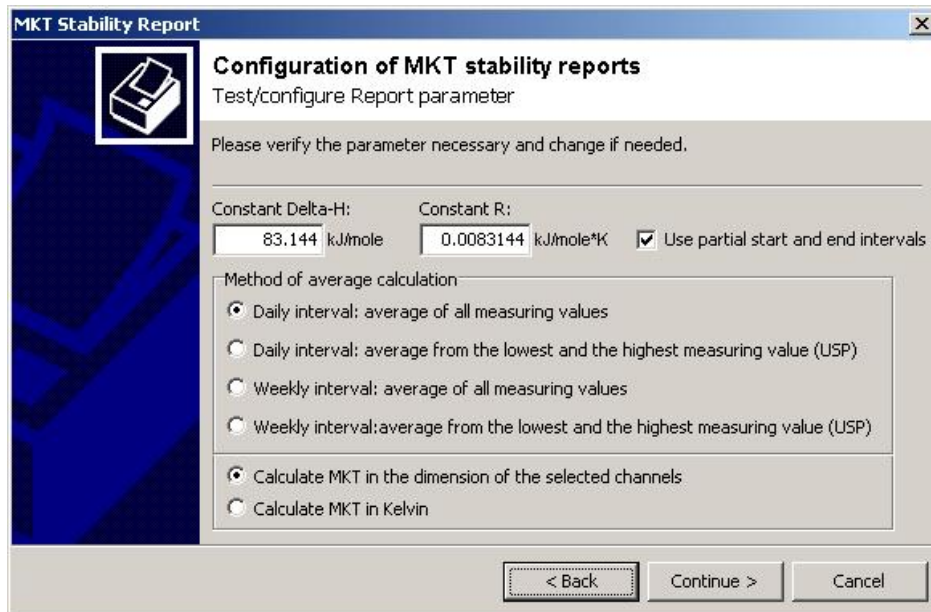


Fig. 9: Additional Report Parameter

In this dialog, you may choose which MKT calculation is preferred and which report structure is desired.

#### Constant Delta-H:

Constant Delta-H is the activating energy in kJ/mole. The value is 83.144 kJ/mole.

#### Constant R:

R is the universal gas constant in kJ/mole \* K and has the value 0.0083144.

#### Method of Mean Calculation:

The method of mean calculation shows ways of computing the necessary mean temperature value. You may choose between daily- or weekly mean value. Daily- or weekly mean values however are calculated from: all measuring values of an interval (Daily- or Weekly interval: mean value of all measuring values) or from: the lowest and the highest measuring values of an interval (Daily- or Weekly interval: mean value from the lowest and the highest measuring values).

You may likewise choose here, if the MKT should be calculated using the channel unit or the unit Kelvin.

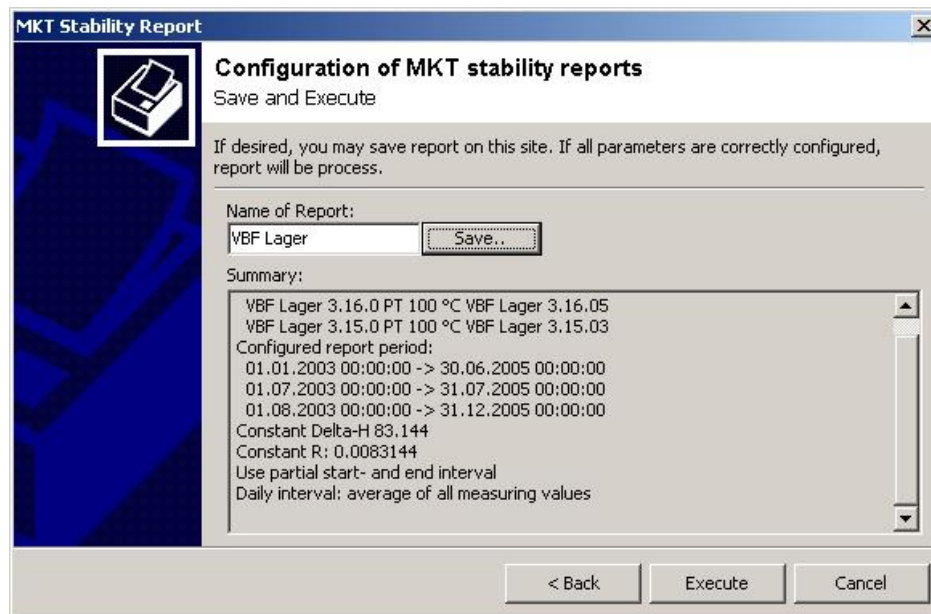


Fig. 9: Summary and Processing of Reports

In this dialog, the configured report parameters of the MKT are summarized.

You may save here your report with its configured parameters under a definite name. This enables you to load the saved report parameters for other reports.

The key "Execute" is not active if all necessary parameters are incomplete. If the key is active you may start the processing of your report. For the calculation and display of the MKT report, the software starts a second window and transfers the configuration. This allows you to process your MKT report and to run your online measurement simultaneously.