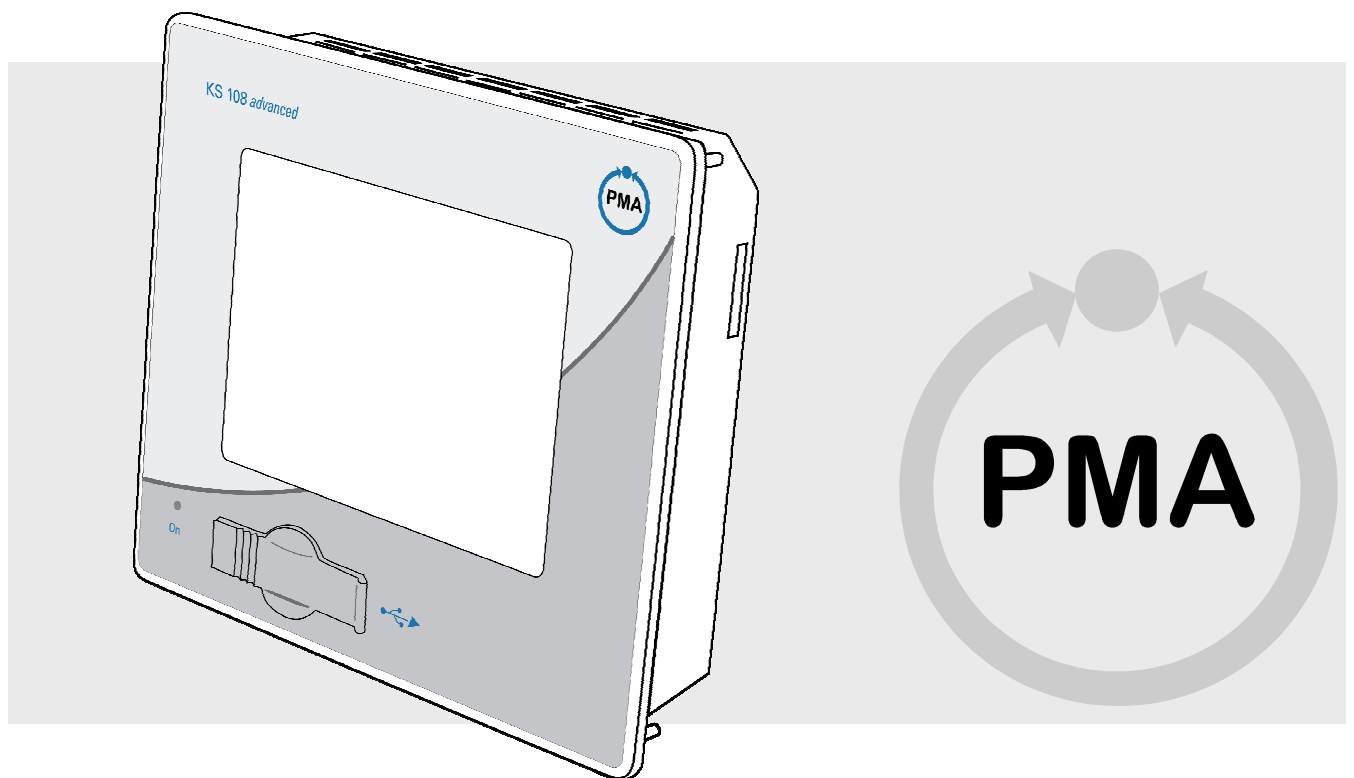


PMA Prozess- und Maschinen-Automation GmbH

Operator's Guide

BlueEdit
Program editor



CE

Operator's guide, please read before using product

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I General

The programmer comprises a programmer function block (PROGRAMMER) and at least one recipe file with a program. The program files are created conveniently using the BlueEdit program editor, however, they can be changed in the instrument. The programmer (PROGRAMMER) may have up to 4 analog and up to 16 digital tracks.



NOTE!

The function block "Programmer" is available in BlueDesign version 1.8.x (and higher).

Each PROGRAMMER file contains a recipe with a program consisting of any number of segments. Further recipes are added to KS108 easy each as a file per recipe. The number of possible segments or recipes is limited only by the memory requirement.

In which directory the required recipes are stored is determined in the engineering (use a separate directory for each PROGRAMMER!). The recipe can be selected on the operating page or via the analog input RecNo.

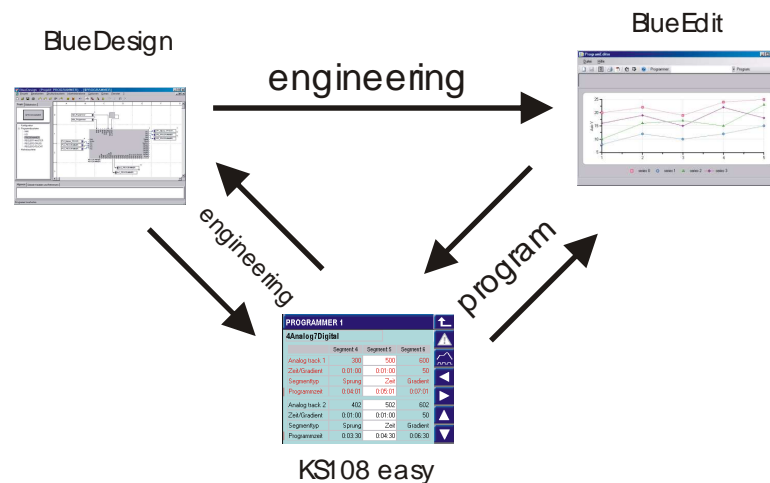


Fig 1: Interaction of the BlueDesign engineering tool and the BlueEdit program editor with the KS108 easy instrument

I-1 Preparation : Defining programs

I-1.1 Basic principles of program creation

A series of parameters must be determined for working with the universal programmer (FB PROGRAMMER). These must be identical in the engineering and in the program and should be defined from the very beginning. Subsequent changes are possible, however, they require corresponding manual corrections in the other components (programs), because these settings must be well matched in the recipe and in the programmer configuration.

I-1.2 Programmer directory

A programmer can have a single recipe. Normally, however, a choice of several ones is offered. In order for the programmer in KS108 easy to find the programs and change only his own ones, an own directory with a unique name must be specified for each programmer (i.e. for each PROGRAMMER function block). This directory is entered into BlueDesign when configuring the function block.

When loading the engineering into KS108 easy, this directory is created, if it still doesn't exist.

The BlueEdit program editor reads the directory name for each programmer function block from the engineering and can then store the related recipes for the individual programmers correctly in KS108 easy.

I-1.3 Number of analog tracks and master track

Each programmer may have up to 4 analog tracks. The 1st track is always the master track. The other tracks are coupled to this track, either via the segment or via the time. For this reason, correct mapping of the relation between the tracks is important.

The names of the tracks should be as clear and meaningful as possible.

Moreover, the programmer operation offers the option to assign a colour to each analog track, in order to permit a quick survey of program curves and values.

I-1.4 Number of digital tracks: control tracks

Each program may have up to 16 digital tracks. The tracks are coupled to the master track via the segment and via the time.

The names of the tracks should be as clear and meaningful as possible.

During operation, the first six control tracks are displayed on the main page. This means it is purposeful to assign the most important signals to control tracks D01 to D06.

Tip: To make an own segment for each switching point unnecessary, the user can set the status of the digital tracks via a switch-on delay and a duty cycle, independent of the relevant segment start and end.

I-2 BlueDesign: Creating an engineering using the PROGRAMMER function block

The programmer in the engineering connects the program sequences determined by the recipes and represented by the controllers and the remaining engineering with the application.

The most important settings and requirements for the programmer in the engineering are:

- signal soft-wiring, i.e. connection of the PROGRAMMER to the overall engineering
- configuration and parameter setting
- user level and passwords, if applicable
- HMI user visualization, if applicable

The most important parameters are the **PROGRAMMER** function blocks themselves, as well as the recipe directory and the number of analog and control tracks for each of these function blocks. If these are known and entered in the engineering, recipe creation can be started.

When creation of the engineering has progressed so far that the information mentioned above is included, an XML file may be created using function "Export *Symbol file*". The *BlueEdit* program editor reads the information required for recipe creation via this file.

Normally, using the symbol file is the more convenient method and less prone to errors. However, data can be entered into BlueEdit manually and changed at any time.

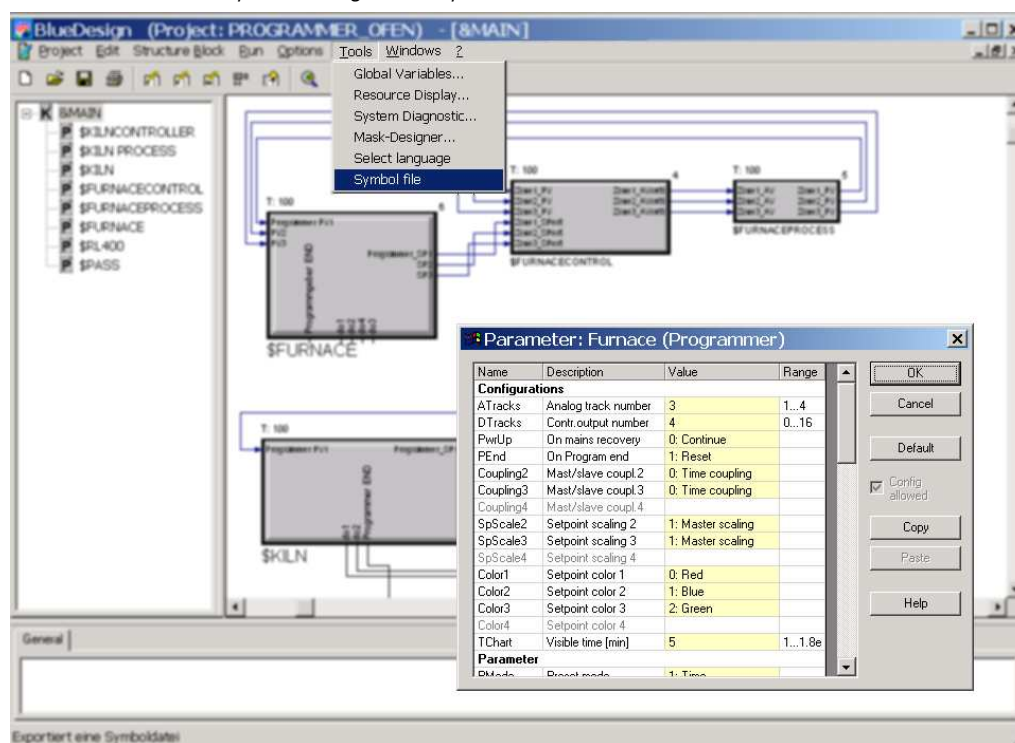


Fig. 2: Engineering in BlueDesign

I-3 BlueEdit: Setting up a device KS108 easy and assign recipes

The following illustration of an example gives an overview over the connection of the data in BlueEdit.

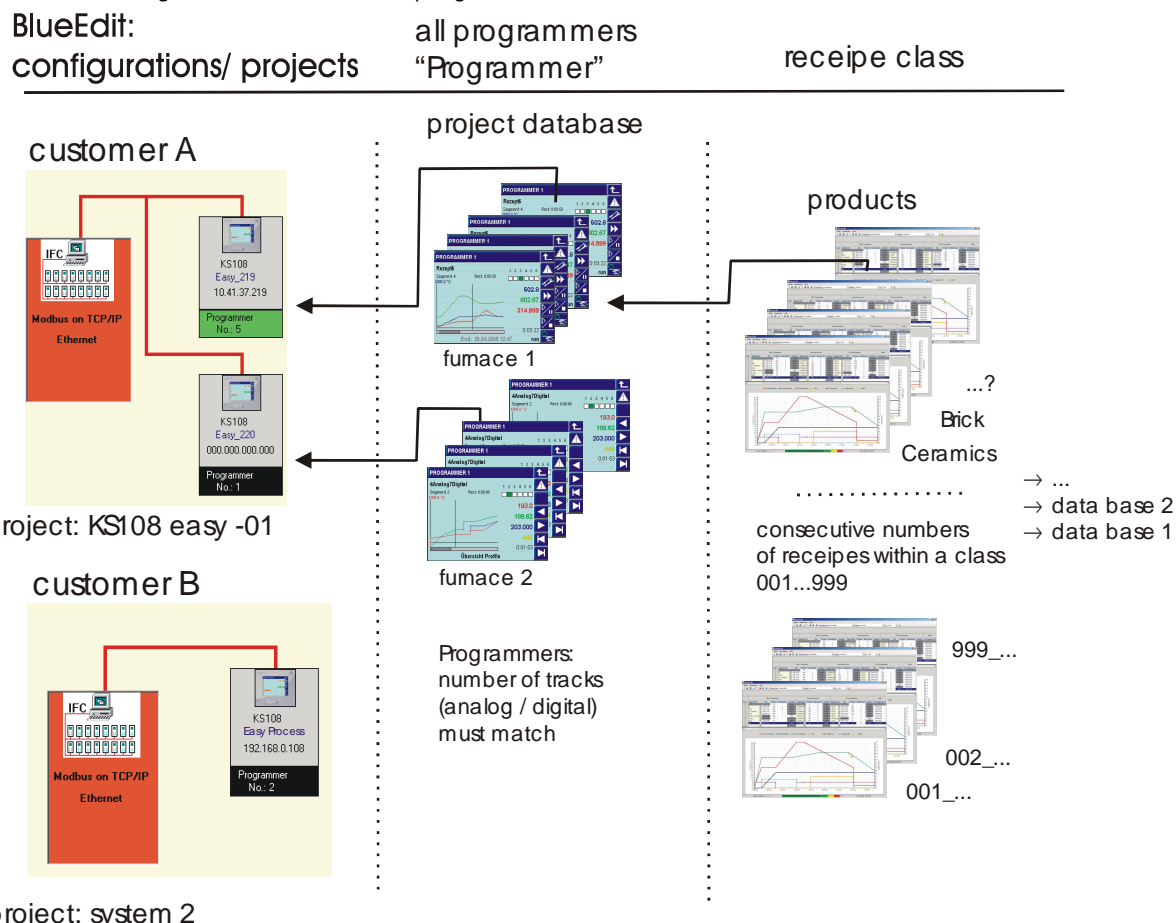


Fig. 3: Configuration project with programmers and recipe databases

Projects are defined for different factory lines or plants (e.g. project 1: "KS108 easy -01" and project 2: "system 2").

Each project can comprise several KS108 easy devices. With name and IP address each device is identified. In project "system 2" for example there is a device "Easy Process" with IP 192.168.0.108.

Recipe are stored in databases (recipe classes). Programmers with same tracks can be administered in one database. With differences in the tracks different databases must be used.

A database can hold up to 999 recipes, with any number 001 to 999 being an unique number. The numbers may have any gaps in between.

II (Initial) Installation

The BlueEdit installation package is found either on the CD delivered with KS108easy or can be downloaded from the PMA homepage.

- Start the installation package "iBlueEdit.exe".
- Confirm that you agree to the license agreement (Fig 1: Interaction of the BlueDesign engineering tool and the BlueEdit program editor with the KS108 easy instrument) and follow the instructions displayed on the monitor.
- A valid license number can be entered both in the configurator and in the program editor under *<Help><License info>*. If no license no. is provided, recipes can be neither transmitted to target instruments nor read. Importing/exporting recipes aren't possible either.

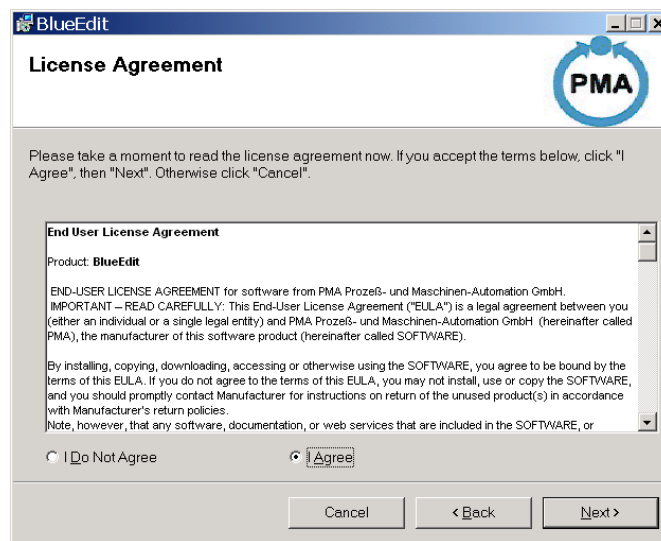


Fig. 4: License agreement

- Specify an installation path (standard installation directory is C:\Programs\PMA Tools\BlueEdit). In the further course, own directories for projects can be created.
- Click „Close“ to close the window.

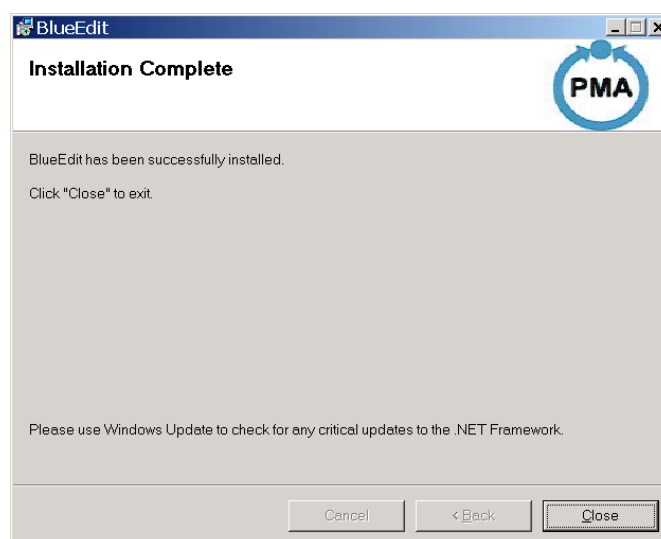


Fig. 5: Finishing the installation

III BlueEdit Configuration

Prior to creating recipes using BlueEdit, some basic settings are required.

III-1 Opening the BlueEdit configurator

The configuration program is found in the start menu under
<Start><Software><PMA Tools><BlueEdit><BlueEdit-Config>.

When opening it for the first time, the following dialog box is shown:

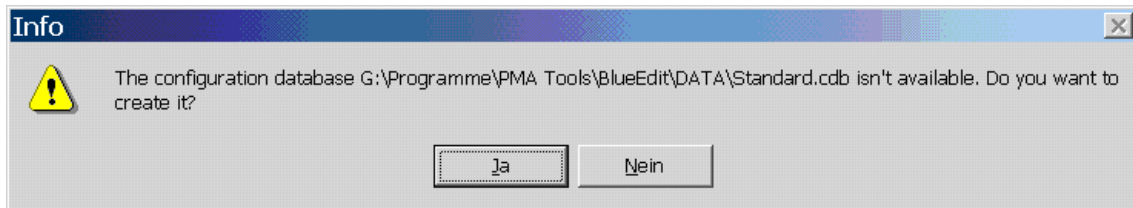


Fig. 6: Creating the first configuration file

After replying "Yes" to confirm, a project name can be entered. Enter an author and a basic directory.



NOTE!

To create further projects or to open already existing projects, click <File><New project> or <File><Open project>.



NOTE!

Using the help via menu

If you want to use the on-line help, click „Help“->“Content”...

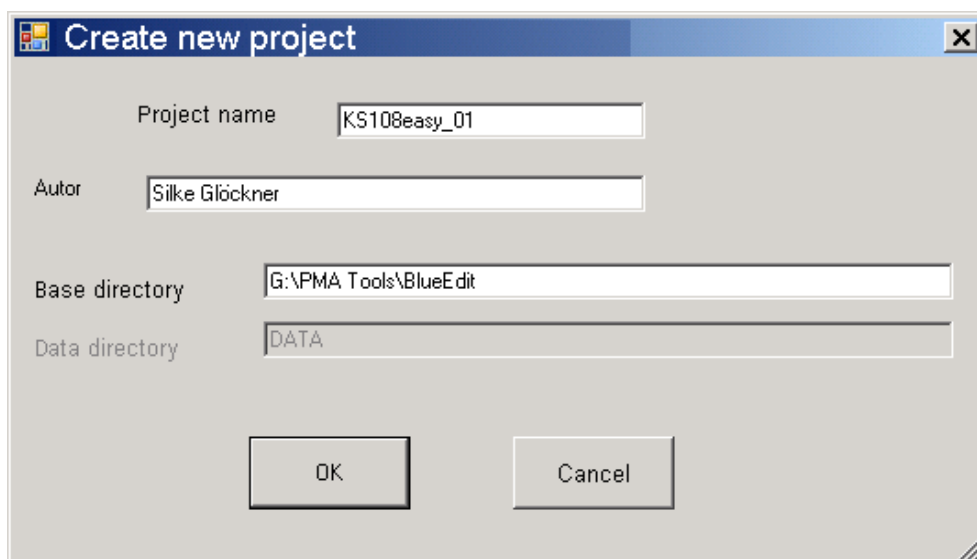


Fig. 7: Creating a project

III-2 Configuring a project

After clicking "OK", a blank spreadsheet is displayed (filling the complete screen). The active project is displayed in the status bar at the bottom of the page.

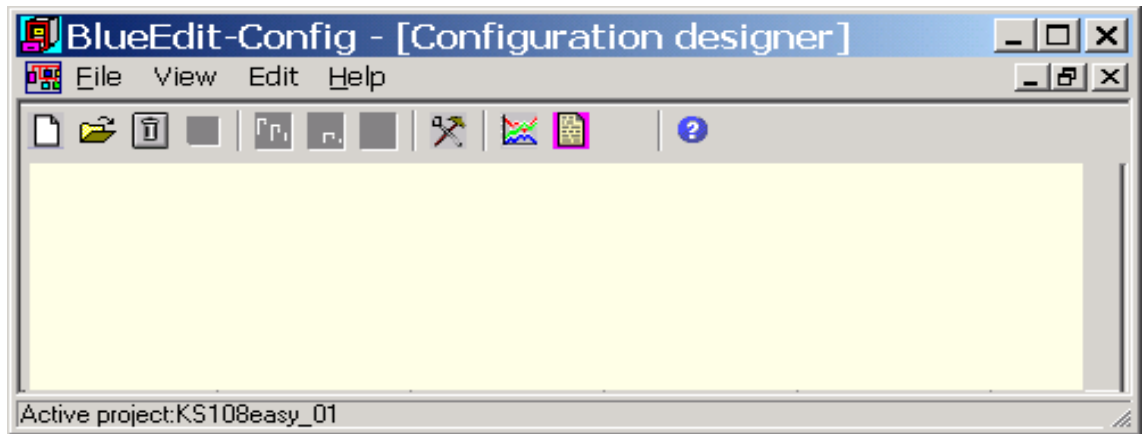


Fig. 8: Blank configuration window

In the configuration you design the organisation of the recipes. The following figure shows an overview:

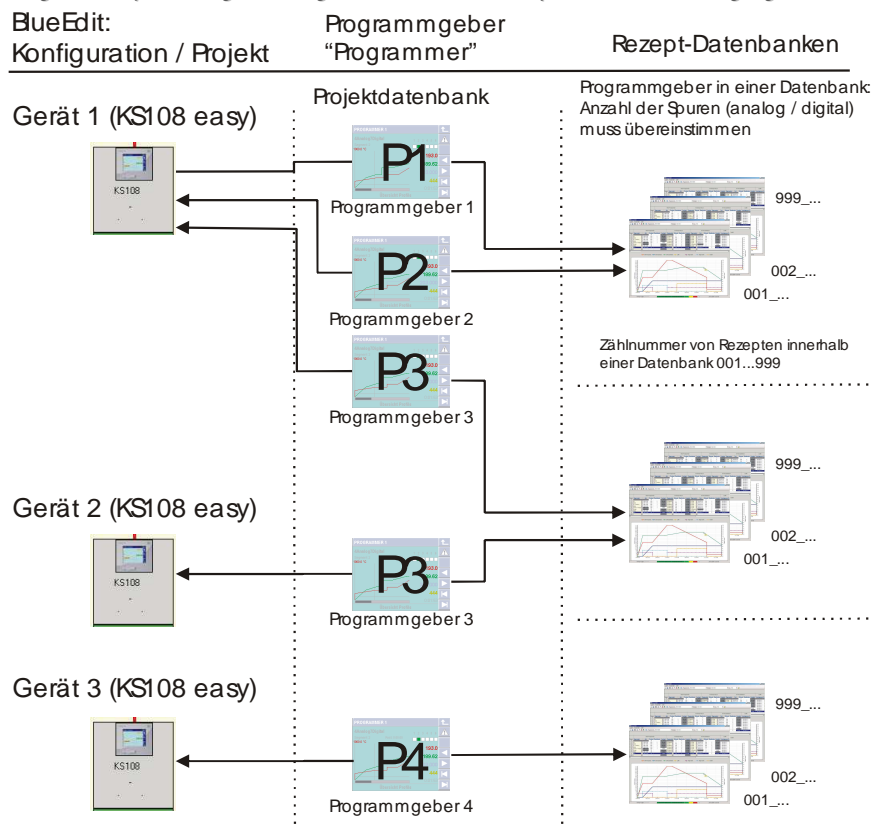


Fig. 9: Complex configuration – several devices KS108 easy with different programmers

- Display the „configuration toolbox“ (→ by a mouse click on the icon, or via menu <View><Toolbox>)

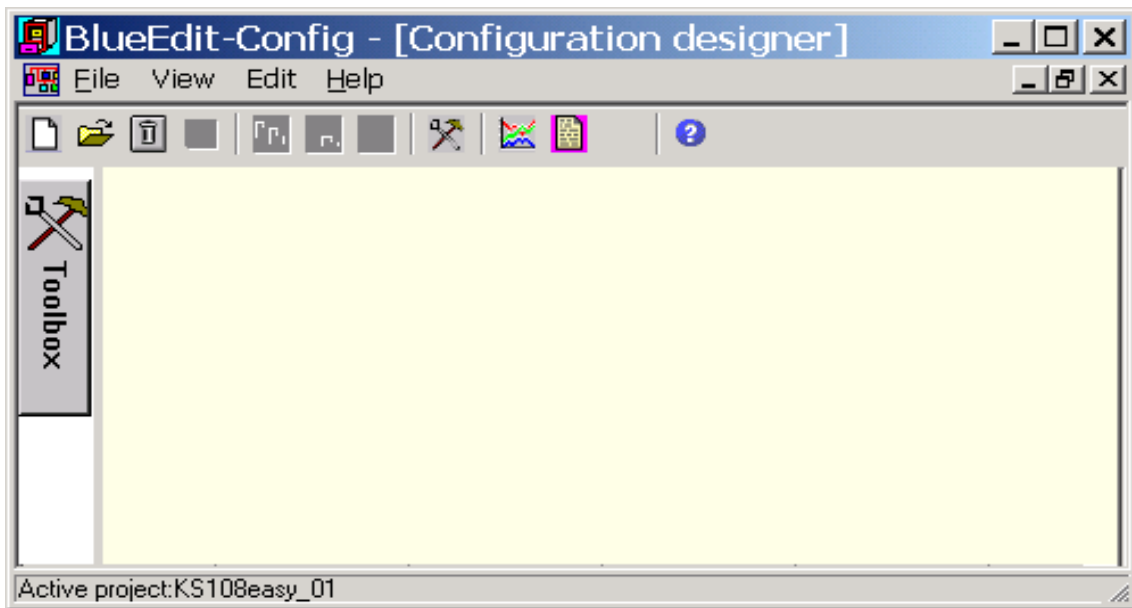


Fig. 10: Display of the toolbox icon

- Position the mouse pointer on the “Toolbox” button. A list of possible communication protocols is opened.

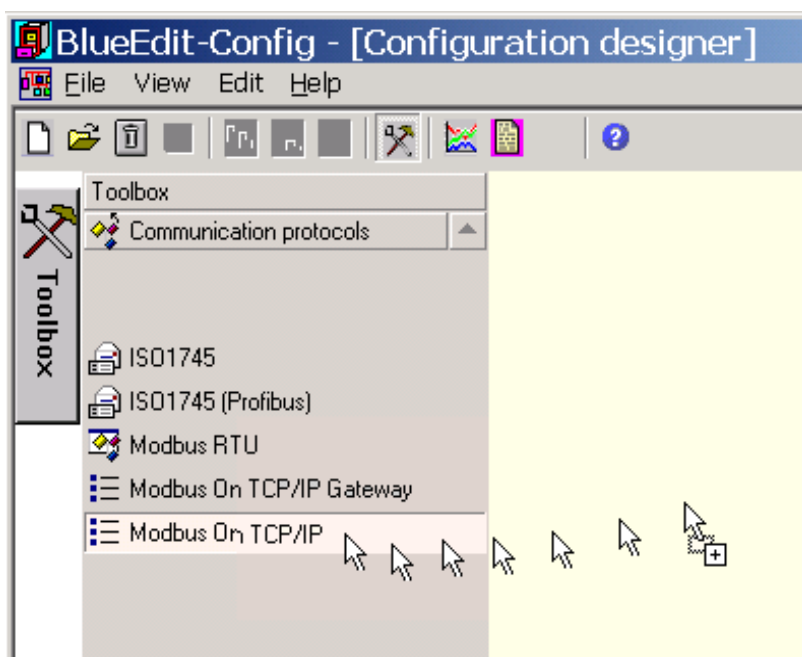


Fig. 11: List of available communication protocols

- Select a protocol to be used for communication with the target instrument (KS108easy) (in this example: Modbus on TCP/IP).

Activate and hold the required protocol using the left mouse key and draw it right onto the spreadsheet. The selected interface is created and shown graphically (Fig. 7: Creating a project).

Accordingly, additional interfaces (e.g. ISO1745, etc.) can be defined.

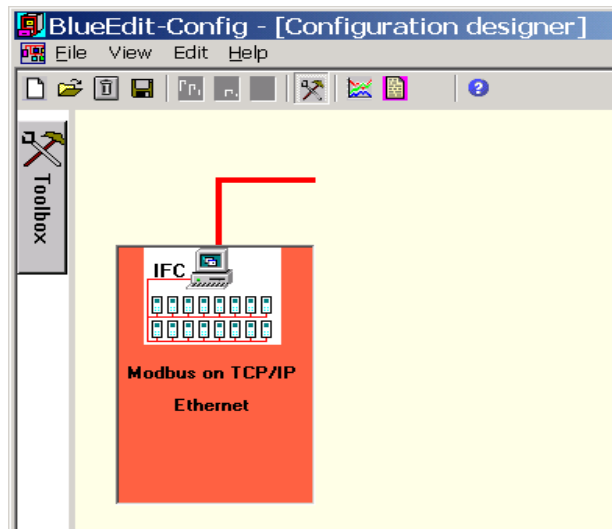


Fig. 12: Setting up an interface

- Select the target instrument: After selecting the communication mode, the target instrument for running the programmer must be added (e.g. KS 108 easy, KS 98 series, KS 90-1). Click with the left mouse key to select the interface (the icon turns black). Then position the mouse pointer on the toolbox. A listbox with the available instruments opens.

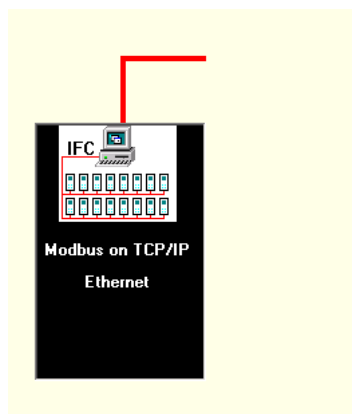


Fig. 13: Selected interface

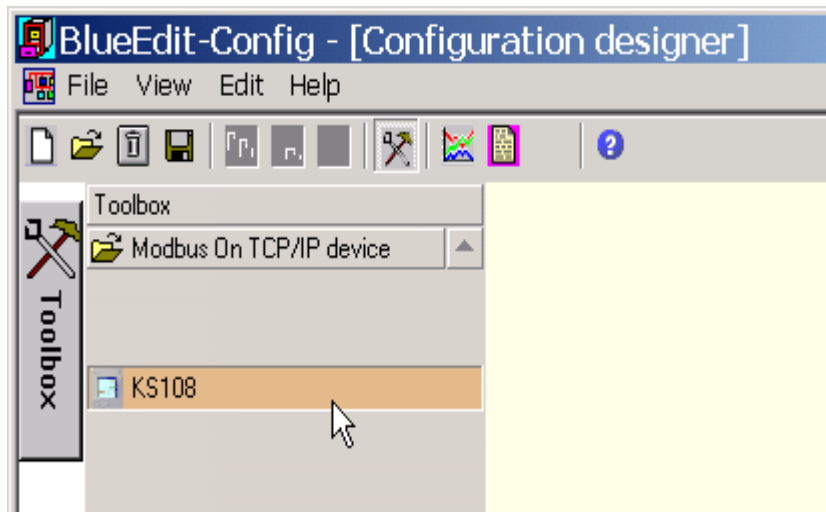


Fig. 14: Available target instruments

- Draw one of the listed instruments (KS108) onto the spreadsheet using the left mouse key (as shown in Fig. 11: List of available communication protocols). A dialog window containing settings (instrument description, etc.) is displayed. Enter a name for the instrument.

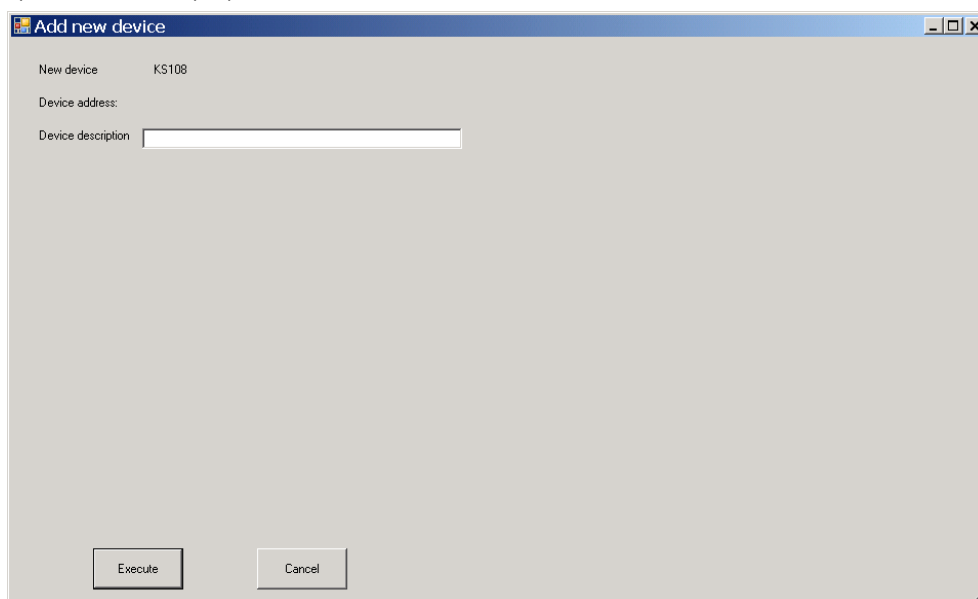


Fig. 15: Name of target instrument

After clicking „Execute“, the first instrument is displayed in the configurator (Fig. 16: Interface and KS108easy (target) instrument):

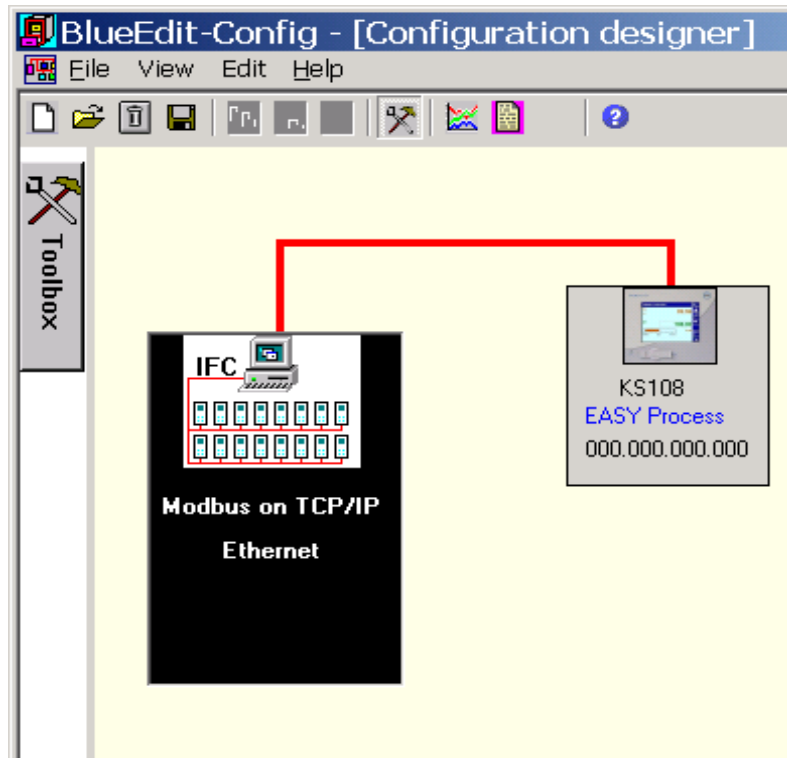


Fig. 16: Interface and KS108easy (target) instrument

III-3 Setting the (target) instrument

1. Click with the left mouse key to select the instrument (the icon turns black).
 - Interface settings (e.g. IP address; shown on the right)
 - Display of the current hierarchy (Modbus; explorer display; shown at the bottom)

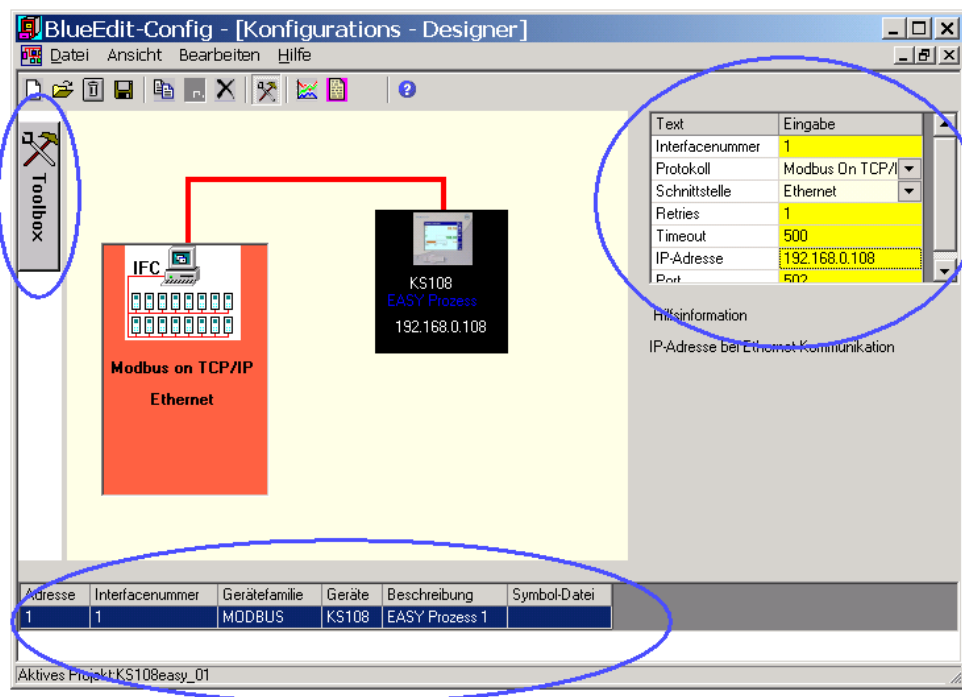
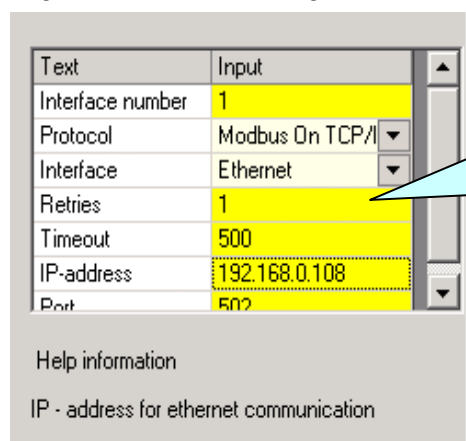


Fig. 17: Overview of the configurator

2. Setting the interface for the target instrument



Parameter dialogue:

Complete all entries by pressing <Enter>. Pay attention to explanations/notes in the bottom section.

Fig. 18: KS 108easy interface setting

III-4 Adding a programmer

Position the mouse pointer on the toolbox icon. A selection listbox with possible applications (programmer) opens.

Activate and hold the required application using the left mouse key and draw it onto the spreadsheet on the right. A dialog window (Fig. 20: Dialog window with settings) with further settings opens.

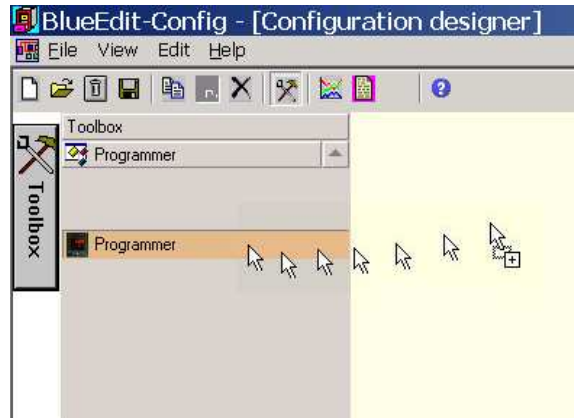


Fig. 19: Adding a programmer



Recommendations!

Set "Options" to Import programmer from XML symbol file. For this, select the relevant symbol file (Fig. 19: Adding a programmer).

Prerequisite: A symbol file (XML file) must have been generated from the (KS 108easy) target instrument engineering previously.



NOTE!

E.g. for a KS108easy engineering, the symbol file (XML) is created using BlueDesign in the commissioning mode under

<Tools><Symbol file> and stored on the computer.



NOTE!

To select a programmer, double click the required programmer function block from the offered engineering hierarchy (available programmers, Fig. 19: Adding a programmer).



HINWEIS!

Already created programmers can be deleted from the right (Selected programmers) window by double clicking on the relevant entry.

Click button "**Execute**" to confirm the settings.

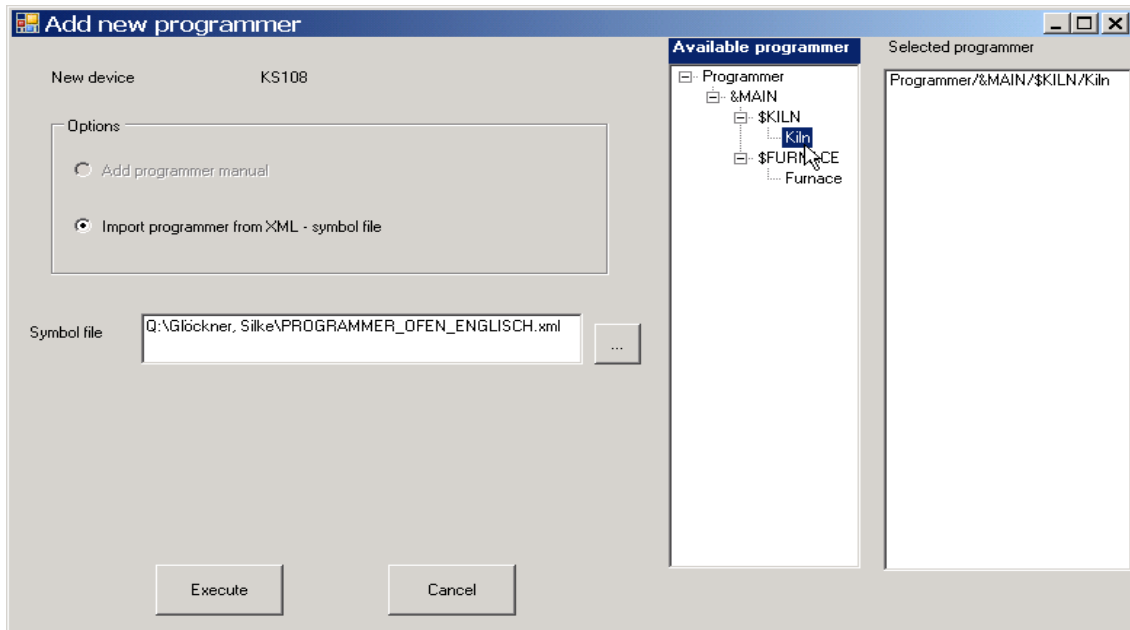


Fig. 20: Dialog window with settings

III-5 Setting up a programmer

After inserting (Fig. 20: Dialog window with settings), a window with further settings relating to the programmer opens:

To be entered by the user

- The name of the programmer in the Editor (recommendation: enter the programmer name from the KS108 engineering)
- The PC directory for storage of recipes, settings, etc.
- The file name on the PC (recommendation: should be identical with the KS108 recipe directory!)

Recipes are stored in a database under the file name on the PC. Each recipe of such a database is given a unique number of 1...999 that can be determined in the KS 108 engineering for recipe selection.

Automatic entries from the engineering symbol file

- Number of analog and digital tracks (must correspond to the KS108 engineering)
- Name of the tracks
- Physical unit (with analog tracks)
- Recipe directory for storage in KS108 (must correspond to the KS108 engineering)

Click "Execute" to confirm the settings. An application (programmer) is marked in "green" in the instrument symbol.

KS108 Programmer

Name:

Verzeichnis:

Dateiname:

Analogspuren

No of analog:

Trackno.	Track name	Unit
01	<input type="text" value="Furnace temperature"/>	<input type="text" value="°C"/>
02	<input type="text" value="Pressure"/>	<input type="text" value="mbar"/>
03	<input type="text" value="O2 concentration"/>	<input type="text" value="ppm"/>
04		

Digitalspuren

No of digital tracks:

Trackno.	Track name
01	<input type="text" value="Fan"/>
02	<input type="text" value="Upper flap"/>
03	<input type="text" value="Lower flap"/>
04	<input type="text" value="circulating air"/>
05	
06	
07	
08	
09	
10	
11	
12	
13	
14	
15	
16	

Verzeichnis KS108:

Fig. 21: Programmer settings

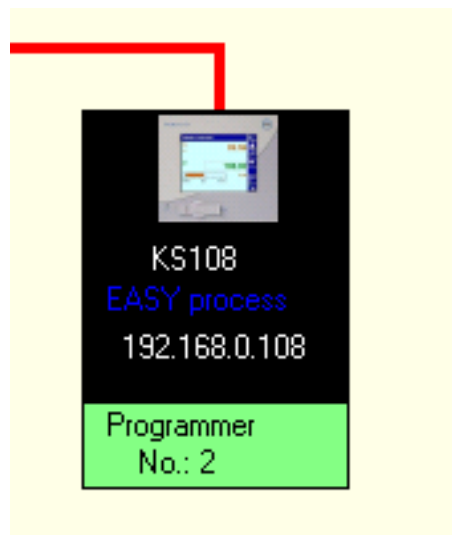


Fig. 22: KS 108 with programmer

III-6 Checking and changing the entries

Click in the green field (programmer, Fig. 22: KS 108 with programmer) with the left mouse key to display a line with all entries in the lower section of the page. Changes can be performed either directly in this line or in the dialog field (right side of page) (opens after clicking a programmer in column *ProgID* of the footer).

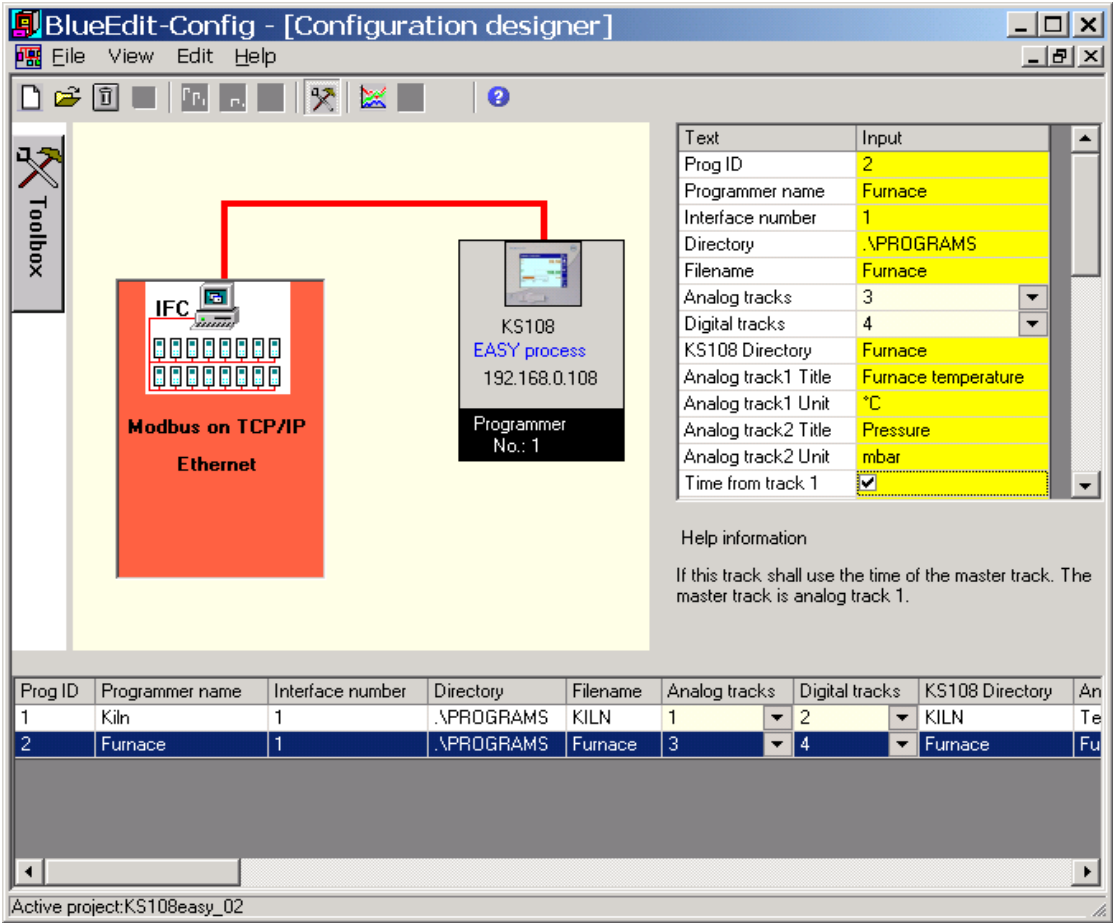


Fig. 23: Checking and changing the entries

III-7 Meaning of basic programmer settings (Fig. 23: Checking and changing the entries)

Only the descriptions requiring explanation are explained below!

ProgID	Number of the individual programmer
Interface number	When setting up each interface block (e.g. Modbus with the first instrument) and each additional instrument, a sequential number is determined automatically.
Directory	The directory on the PC for storage of the database with the created recipes.
Filename	Name of the recipe database
KS108 Directory	Name of the KS108 recipe directory entered in the engineering.
Time from track 1	If the related checkbox is ticked, the segment times of the master track (track 1) are copied into the segment times of the corresponding slave track automatically. In this case, column "Time" in the BlueEdit program editor is not shown.
ATrack1Min, ATrack1Max, ...	Scaling of graphical display of analogue tracks. If set to "0" the tracks are scaled automatically.

III-8 Deleting and copying

A programmer can be deleted or copied by clicking in the programmer field with the right mouse key. When copying, all settings are included. Click with the right mouse key on the instrument icon (in the upper part) to copy or delete the instrument.

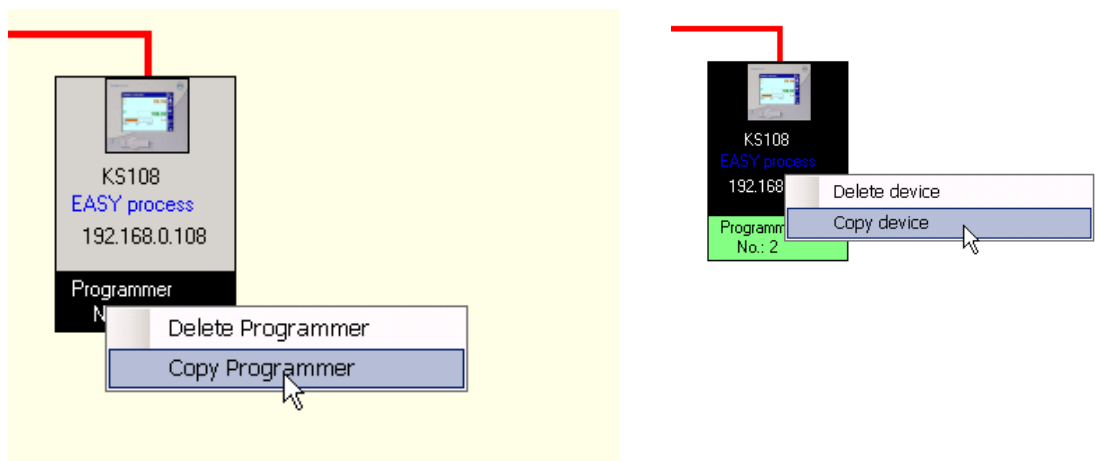


Fig. 24: Deleting or copying

III-9 Saving the configuration

(<File><Save project>)

III-10 Other settings

to be described by MSI !

III-10.1 General configuration

Language selection

Under *<Edit><General configuration>* a dialog for language selection etc. opens. The language selection is effective only after closing and opening the configurator.

(Menu entry "Default locale" = *<en>* for English, *<de>* for German.)

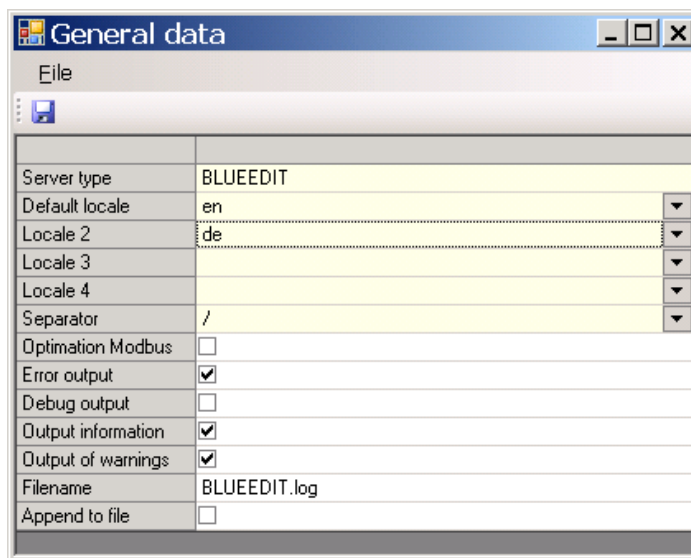


Fig. 25: Other settings

III-11 Line chart configuration

To adapt the display of the tracks to own requirements, it can be changed for analogue and digital tracks. You may change line colour and line width as well as the position and font of the legend. To start the Line diagram configuration click on *<Edit><linediagram configuration>* or select one of the two icons

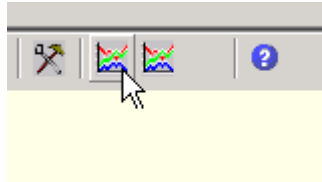


Fig. 26: Call of line chart configuration for analog (left) and digital tracks (right)

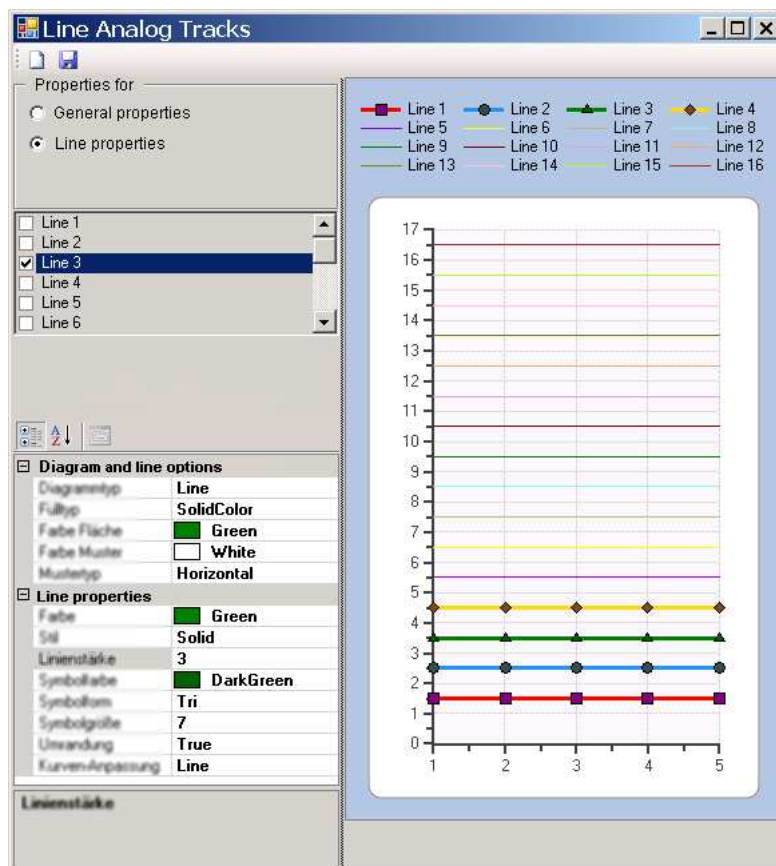


Fig. 27: Call of line chart configuration for analog (left) and digital tracks (right)

III-12 Selecting the OPC server

III-13 On-line help

IV Using the BlueEdit program editor

IV-1 General information

After completing the basic settings of the programmer using the configurator, recipes can be created. Basic settings are:

- Interface and communication parameters (see Fig. 17: Overview of the configurator)
- Directory and name of the recipes on the PC and in KS 108easy, and the
- settings for the recipes, such as number and name or tracks, etc. (see Fig. 20: Dialog window with settings)



NOTE!

- When opening the program editor, the project selected last using the configurator is used as a base for recipe creation.
- In the program editor, another project can be selected for recipe creation via <File><Select project>.
- Configuration changes are stored in the program editor only after opening it again. If the configuration is changed during recipe creation, save the recipe, exit BlueEdit and re-open it.
- A valid license number can be entered both in the configurator and in the program editor under <Help><License info>. If the license number is missing, the recipes can be neither transmitted to the target instruments nor read. Recipe import/export aren't possible either.

IV-1.1 Definitions

Several (KS 108easy) target instruments may be included in a project. Projects are created using the configurator.

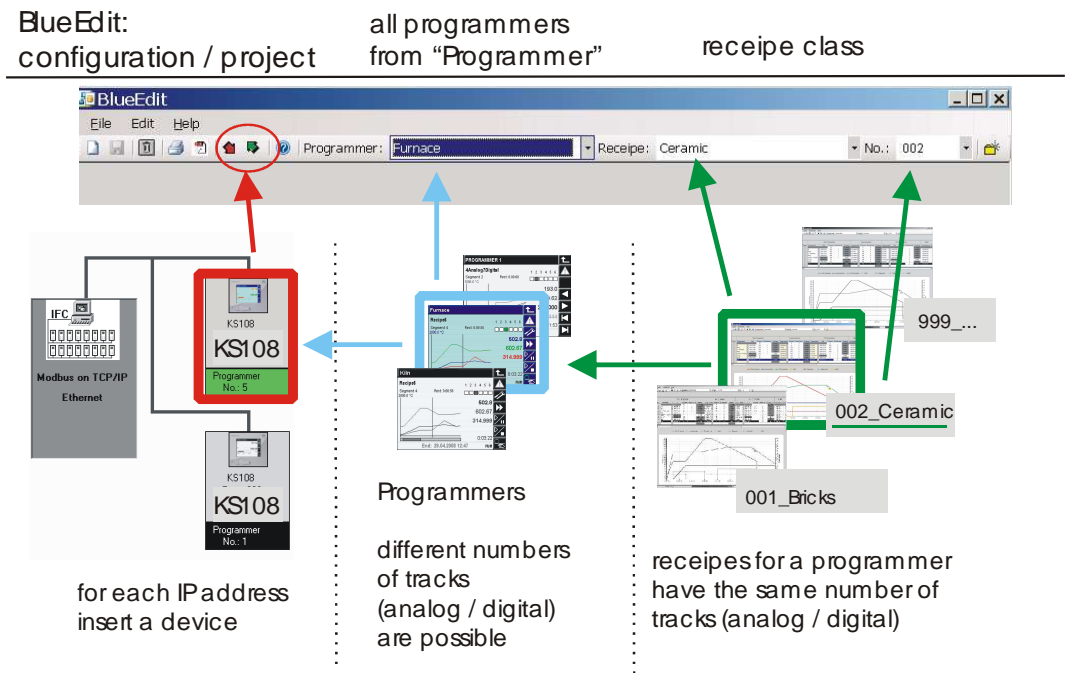


Fig. 28: Configuration project in program editor

Within the (KS 108easy) target instrument, several programmers can be included (e.g. annealing furnace, baking oven, ...). Each programmer has a fixed individual number of tracks. An own (PC) database and an own recipe directory in KS 108 can be created for each programmer.

Recipes are firmly assigned to programmers and always have the same number and type of tracks as the programmer. Recipes are distinguished by the type of products to be processed (brick, pan tile, ceramics, ...) and thus by the number of segments.

Recipes within a database have a unique number (000...999) and can be selected in KS 108 both via this number and via the recipe name. The recipe no. is displayed in KS 108 only when selecting the recipe; it doesn't appear on the operating pages.

In the program editor, the recipe is selected unambiguously using the *programmer* and *recipe number*.

The assignment of the programmer to an instrument also determines the KS 108easy target address (IP). For this reason, sending recipes to or reading recipes from the target instrument are possible without entry of further parameters.

IV-2 Opening the BlueEdit program editor

The program editor is found in the start menu under

<Start><Software><PMA Tools><BlueEdit><BlueEdit>. A start screen is displayed (Fig. 29: Start screen and programmer selection).

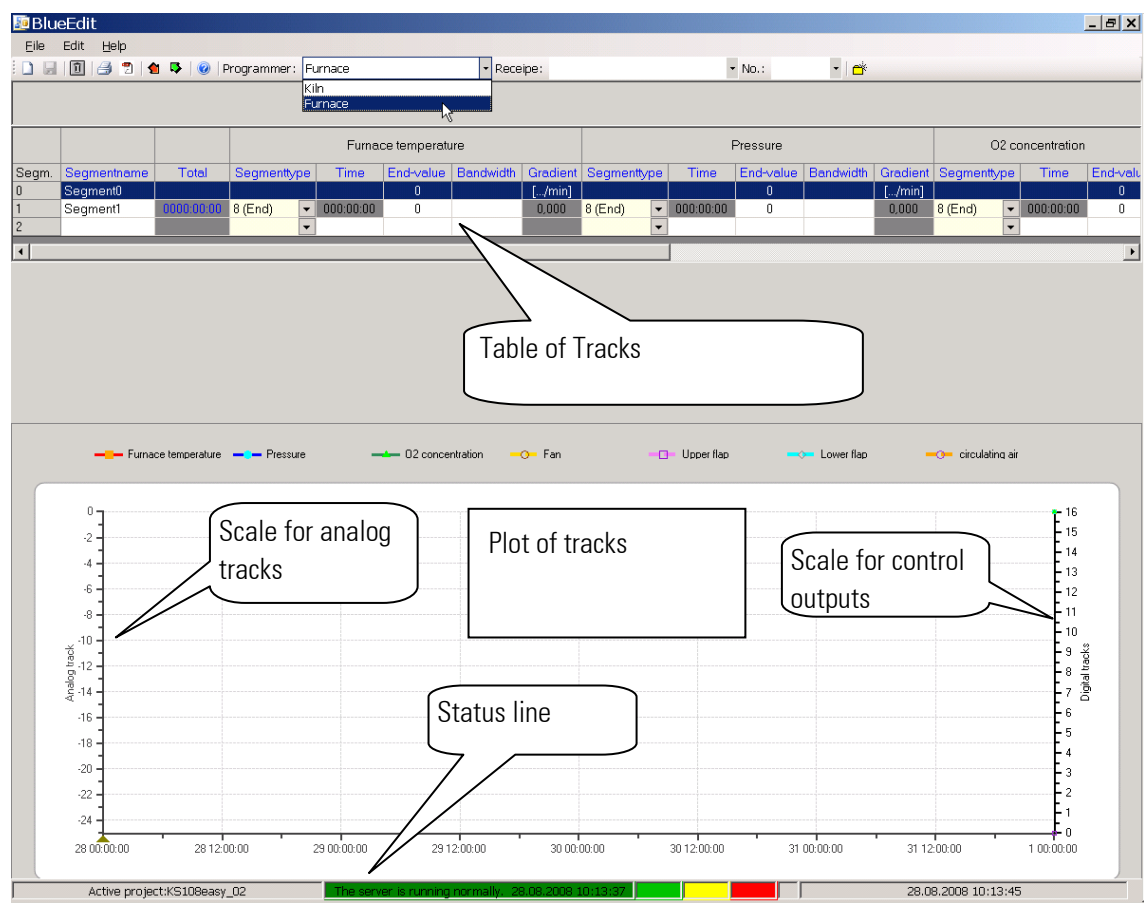


Fig. 29: Start screen and programmer selection

IV-3 Creating a new recipe

To start with, create a new recipe. The following steps are required:

1. Select the programmer for which you want to create a recipe (Fig. 28: Configuration project in program editor, mouse pointer).
2. Open a new table either via `<File><New>` or via the button (Fig. 29: Start screen and programmer selection).

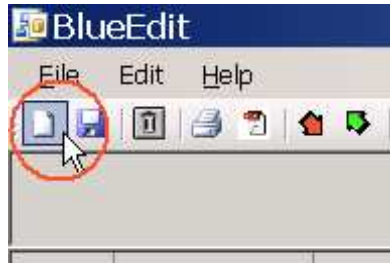


Fig. 30: Creating a new recipe

3. Enter a recipe name (*program*) and a unique recipe number (*recipe no. 1...999*) in the following dialog window.
The recipe may be selected both via the engineering and via KS108 operation. The number is not included on the display of the current program.
4. After clicking "OK" to confirm, you can decide whether you want to save changes of the previously active recipe (e.g. imported recipe, `<File><Data import>`).

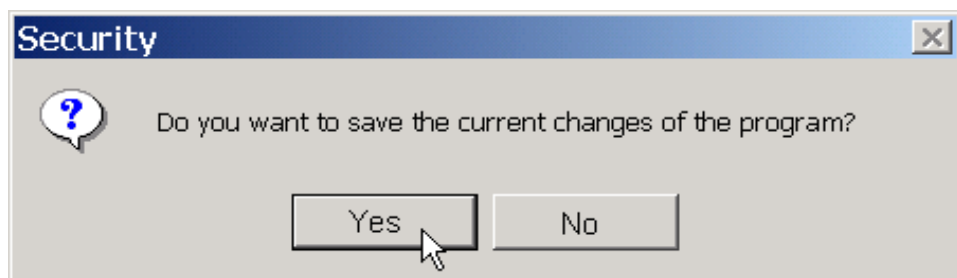


Fig. 31: Saving the recipe change before opening a new recipe

5. After clicking "OK" to confirm, you can decide if you want to save the parameters of the previously active recipe (e.g. imported recipe, `<File><Data import>`).

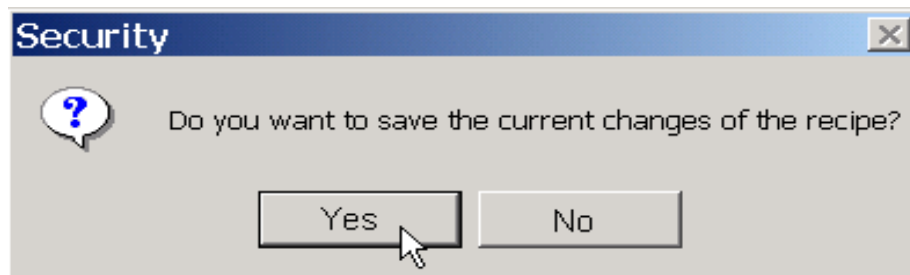


Fig. 32: Saving parameters in a new recipe

According to the example, you can now create the first recipe "Ceramic" for the programmer „Furnace“.

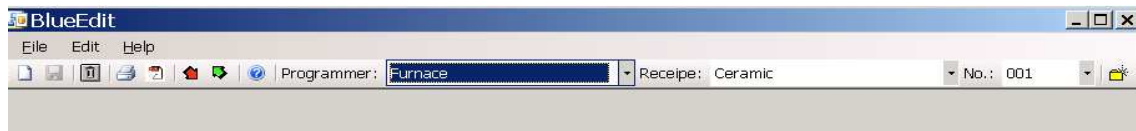


Fig. 33: Entered recipe header line



NOTE!

If you want to define recipes for various products, it is purposeful to enter a different numeric range for each product class, e.g.

- | | |
|---------------|-------------|
| ■ Floor tiles | → 1... 99 |
| ■ Wall tiles | → 100...199 |
| ■ Sink | → 200...299 |
| ■ etc. | |

IV-3.1 Insert / delete / copy segments

Via context menu, called with right mouse button, segments can be changed:

- Delete segments:
The row is deleted, following segments are moved a row upwards.
- Insert a new segment:
A new segment is inserted with default settings. All following rows are moved a row downwards.
- Copy / insert a segment:
A segment is copied and can inserted at a different row. The marked segment is overwritten while inserting! If the copied segment should be added to the recipe, so the copied segment takes place between two existing segments, a new segment must be inserted in this place first!

IV-4 Entering a recipe

A blank recipe form is displayed. In the recipe table (upper part), the tracks are given in the horizontal columns and the segments are shown in the vertical columns. The first track in the table is always the „master track“. Analog and control tracks are determined by the units and physical quantities provided in the process. For this reason, they are already defined with name and unit in the KS108 engineering and are stored in the table automatically (from the XML file).

The number and type of segments are dependent on the products to be processed. Like processing steps or process phases in a batch sequence, segments are defined only in the recipe.

The overall time of the master track is displayed in column Total. The segment time is calculated automatically from the gradients and the segment end value. The overall time is also valid for all control tracks.

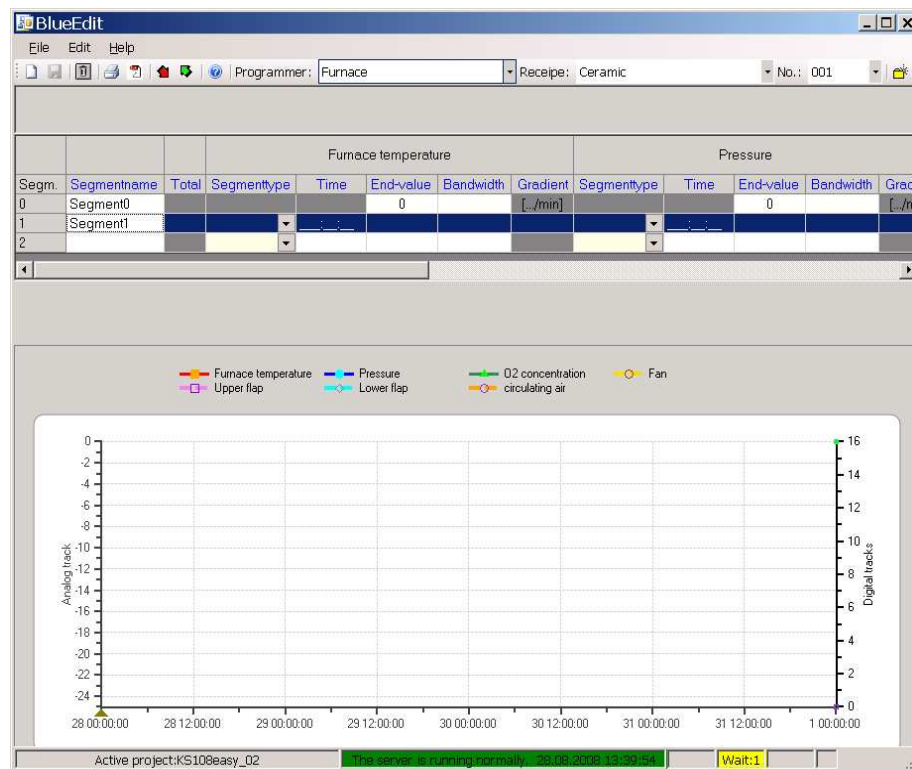


Fig. 34: Blank recipe form

IV-5 Practical tips for entry of a table:

1. Determine the segment type for all segments of the master track (first analog track; here: furnace temperature) and assign names to the segments. With each entry, the table is extended by one line automatically.
The first segment (line 0) is the reset segment and determines the initial condition of all tracks (before program start). The last segment determines the program end (end segment).
2. Then enter the start value for the tracks (line 0, column *End-value*).

3. Enter the segment times, end values and bandwidths for the master track (first track). For definition of the segment types, refer to the description of the relevant target instrument (here: KS108easy). Simultaneously, the expected track progress is displayed graphically in the lower section.

**NOTE!**

Depending on segment type, either the segment time or a gradient must be entered. Disabled fields are shown with a gray background. For hold segments, the end value of the previous segment is taken over automatically.

Bandwidths are switched off, when the corresponding field is empty. "0" means that the effective bandwidth is zero (any deviation would interrupt the program).

4. Now, define the slave tracks analogously to the master track.

**NOTE!**

If "Time from track 1 " was activated for an analog track in the configurator, column "Time" in the program editor isn't displayed. The time of the master (track 1) is used automatically.

5. Finally, the control tracks are defined. Control tracks are firmly coupled to the master track segmentation. Within a segment, a *delay* and *switching time* for each control track can be set. The right scale of the graph shows the control track numbers. I.e. the digital track 3 "Lower flap" in the example is shown as a value of 3.

IV-6 Saving the recipe

You can save the recipe under <File><Save> or using the disk icon. To save the recipe under a new name and a new recipe no., click <File><Save as>.

IV-7 Deleting a recipe

You can delete the recipe under <File><Delete recipe> or using the trash can icon.

IV-8 Rename a recipe

You can rename a recipe under <File><Rename recipe>. It is stored with the same recipe number.



NOTE!

If a recipe is renamed in BlueEdit, sending it to the device results in a recipe with the selected number and the new name. An recipe already sendt to the device with the old name becomes invalid and must be deleted manually.

IV-9 Editing recipes

To edit a recipe, select it via *Programmer* and *Recipe* or *Programmer* and *No.* and edit it as described.

IV-10 Importing/exporting recipes

Menu items <File><Data export> can be used to save recipes as text files, in order, for example, to send them. Analogously, received recipes may be read via <File><Data import>.

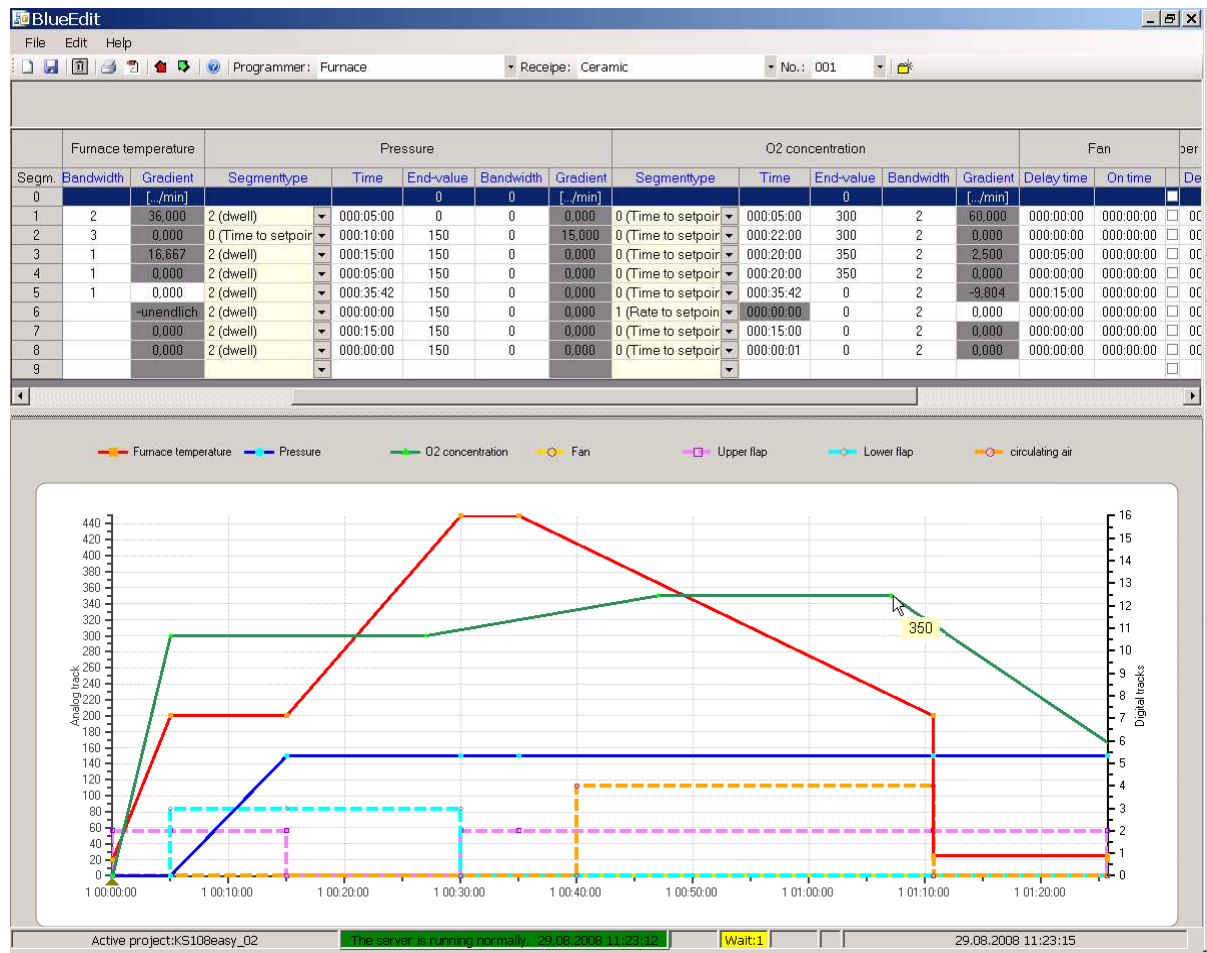


Fig. 35: Completed recipe form with graphic display of tracks

IV-11 Sending a recipe to KS108 / reading a recipe from KS108



Buttons   of the toolbar can be used to transmit the active (displayed) recipe to a (KS 108) instrument. The device IP address was set during configuration. Accordingly, a recipe can be read from an instrument.



Fig. 36: Sending of recipe into KS108



NOTE!

To read a recipe from an instrument, all communication parameters must be set appropriately in the configurator. Additionally, the recipe name and the number must have been created in the program editor consistently.

IV-12 Sending a recipe to simulation Sim108 / reading a recipe from simulation Sim108



With *<Tools><Communication with device>* chosen, buttons   of the toolbar can be used to transmit the active (displayed) recipe to a (KS 108) instrument. This is default setting of BlueEdit. On the right end of the toolbar the icon for communication with the device is displayed:



Fig. 37: Kommunikation with device KS1088

Analogously, recipes can be transmitted to the simulation Sim108 of the device.

Choose *<Tools><Communication with simulation>*. The communication is switched to simulation, indicated with the following icon at the right end of the toolbar:



Fig. 38: Kommunikation zur Simulation Sim108

If simulation is not automatically addressed with the correct setting, the setting of the simulation can be changed. Choose *<Tools><Settings simulation>*. A dialog opens for you to verify the settings of the communication with the simulation Sim108. You can change them if necessary.

IV-13 Details in the graph: zooming and reading values

Check the values of the tracks in positioning the cursor (small green triangle under the left scala) to the point of question. The values of all tracks are displayed.

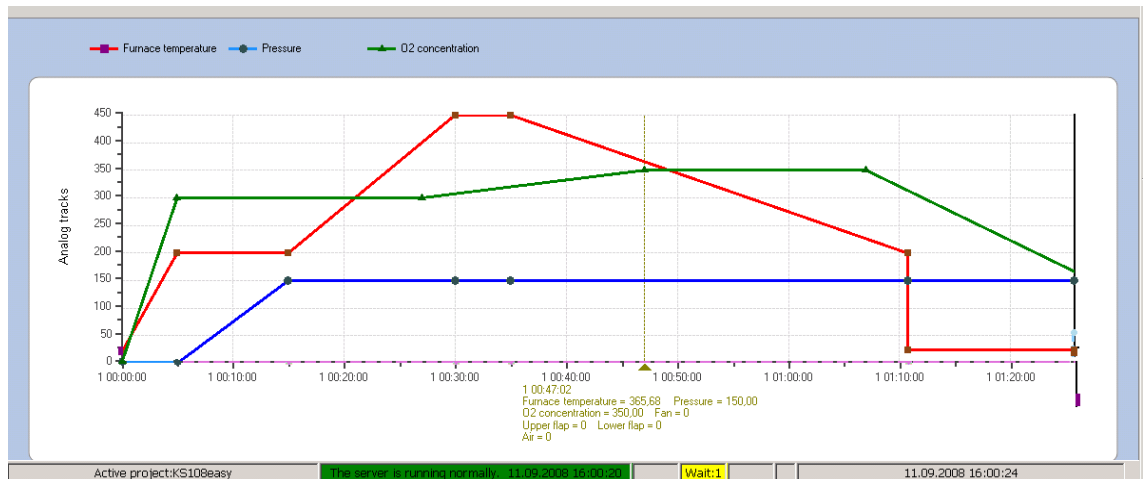


Fig. 39: Read values of any position with the cursor

Have a detailed look with pushed key [Alt] and drawing a rectangle on the area you want to see zoomed.

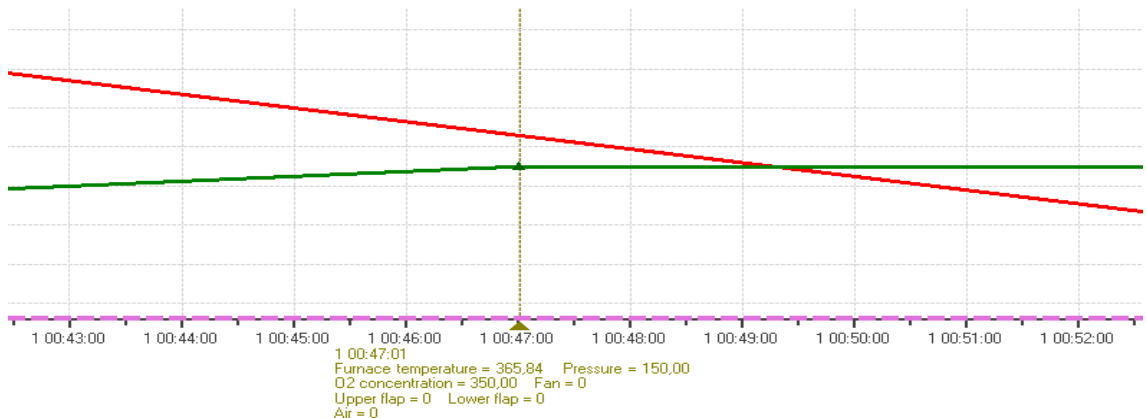


Fig. 40: [Alt] + left mouse click for zoom, [Alt] + right click for normal view

IV-14 Printing as a PDF file

The table of each analog track is printed on a separate page. Control tracks are grouped pairwise on one page. The graph is printed on the last page.

V Index

Error! No index entries found.