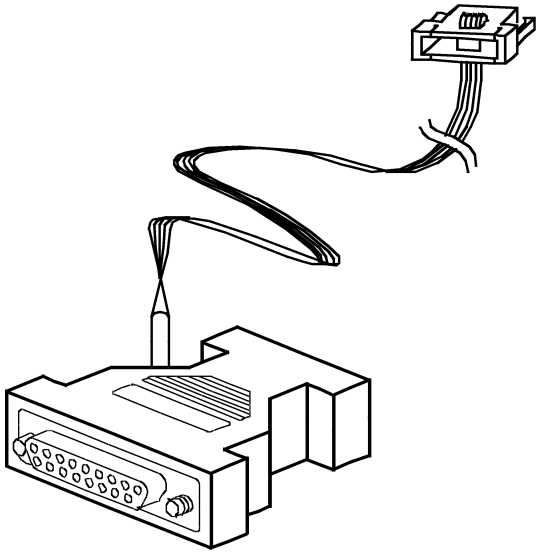

# JUMO IMAGO 500

## PC Programs for multi-channel process and program controller

# B 70.3590.6 Operating Manual

03.04/00412070

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## 1.1 Preface

**Guarantee**

If any difficulties should arise during start-up, please do not manipulate the unit in any way. You could endanger your rights under the instrument guarantee! Please contact the nearest subsidiary or the head office in such a case.

**Data backup**

Make a regular backup of your configuration files.
If you reformat the hard disk, the setup settings will be deleted, including the teleservice settings and programs created in the program editor!

**Update**

It is easy to install a new software version at a later date.

**JUMO PC programs**

You can also open old configuration files and carry on using them.

JUMO setup programs for other devices can also be installed, without any interference between the programs.
However, only one program may be active at a time, because they make joint use of the interfaces.

# 1 Introduction

## 1.2 Arrangement of the documentation

**Operating Manual B 70.0101.6**

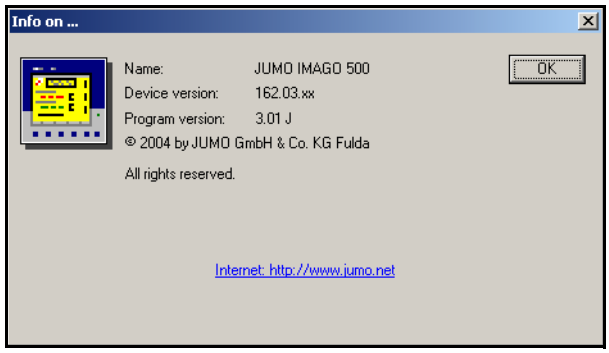
This Operating Manual is addressed to equipment manufacturers with appropriate technical training and PC knowledge.

Please read the operating instructions before commissioning the instrument. Keep these operating instructions in a place which is accessible to all users at all times.
Please assist us to improve the operating instructions, where necessary.

Phone +49 661 6003-0
Fax +49 661 6003-607
e-mail mail@jumo.net

**Version**

This Operating Manual has been created using the Windows 2000 operating system, and describes the software version 162.03.XX



## 1.3 Typographical conventions

### 1.3.1 Warning signs

**Caution**

This symbol is used when there may be **damage to equipment or data** if the instructions are ignored or not followed correctly!

### 1.3.2 Note signs

**Note**

This symbol is used when your **special attention** is drawn to a remark.

**Reference**

This symbol refers to **further information** in other manuals, chapters or sections.

**Footnote**

abc[1] Footnotes are remarks that **refer to specific points** in the text. Footnotes consist of two parts:
A marker in the text, and the footnote text itself.
The markers in the text are arranged as continuous superscript numbers.

**Action to be taken**

* This symbol indicates that an **action to be performed** is described. The individual steps are marked by this asterisk, e.g.

* Use *OK* to quit

### 1.3.3 Representation

**Menu items**

*File* ➔ *Save as* Small arrows between the words indicate a **sequence of commands** which must be performed one after another.

# 1 Introduction

## 2.1 Notes for Windows NT/2000/XP

**The installation will not be carried out correctly unless the following conditions are fulfilled:**

1.) The user who is logged in during installation must be the same as the one who will subsequently be working with the program.

2.) The user must have administrator rights during the installation.

## 2.2 What is on the CD?

**Software**

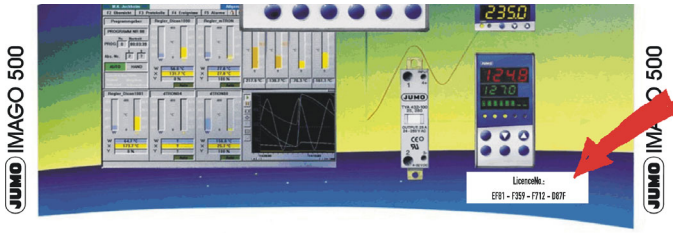
- Setup program for Windows 98/NT4.0/2000/ME/XP
- Program editor for Windows 98/NT4.0/2000/ME/XP
- Teleservice for Windows 98/NT4.0/2000/ME/XP

**Documentation**

- Operating Instructions for all PC programs
- Operating Instructions for the device
- Interface Description
- MODBUS address table
- Data Sheet 70.3590

**License number**

Various license numbers are printed on the CD cover, depending on what you ordered.
These numbers must be entered during the installation, or in the installed setup program at a later time.
All the functions that were ordered can be enabled in this way.




⇨ Chapter 7.7 “Enable program options”

### 2.2.1 Setup program

**General**

The setup program is a Windows[1] program to enable simple configuration of JUMO devices. The archive options allow the creation of data backups for the device parameters of the particular installation.

**Calibrating and testing**

This activity must only be carried out by properly qualified personnel with suitable calibration equipment.

⇨ Chapter 7.5 “Adjust and test”

### 2.2.2 Teleservice

**License number**

The “Teleservice” software enables remote configuration and monitoring of the installation. A modem or interface can be used to exchange data under password protection.

Teleservice is an option. It is not included in the standard software, but can be enabled through an additional license number.

If you want to request a license number at a later date, please contact our head office.

See “Data backup” on Page 5.

**Program description**

⇨ Chapter 6

### 2.2.3 Program editor

For the comfortable entry of parameters for timed progams with copying and insertion functions. The programs entered here can subsequently be optimized on the device, from the keyboard.

**Program description**

⇨ Chapter 5

[1] Microsoft and Windows are registered trademarks of Microsoft Corporation

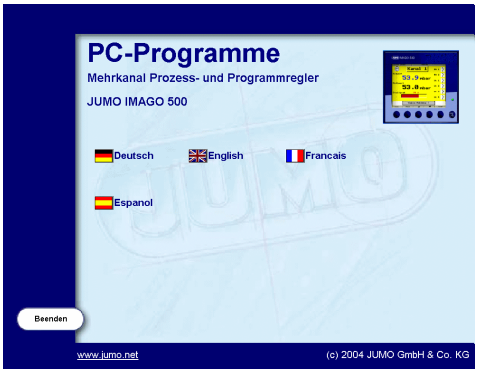
## 2.3 Hardware and software requirements

- PC Pentium 100 MHz
- 64 MB RAM
- 30/20 MB available on hard disk
- CD-ROM drive
- COM interface available
- Microsoft Windows® 98/NT4.0/2000/ME/XP

## 2.4 Installing the setup program

✱ Insert the CD-ROM into the drive (the program will start automatically)

✱ If the autostart function is switched off: Run the file “start.exe”




✱ Click on the required language

**Print out the documentation**

If Acrobat Reader is already installed on your PC, you can print out the documentation immediately.

✱ If not, click on *Acrobat Reader* to install it

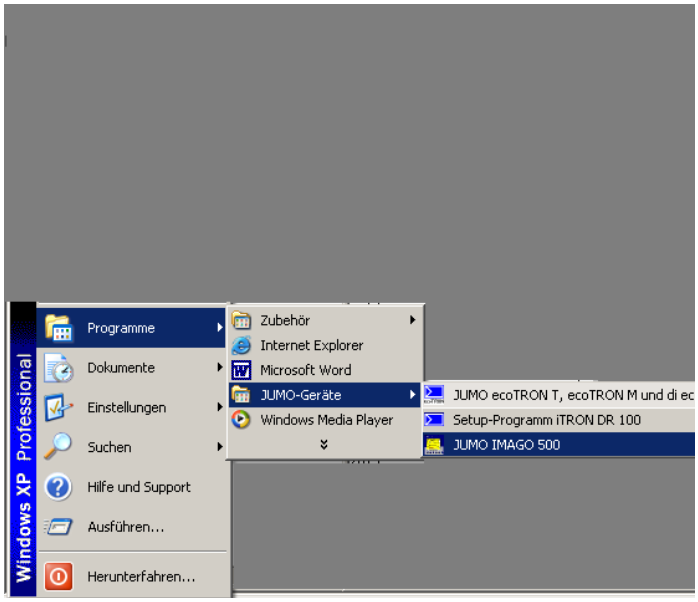
✱ Enter the license number(s) if you want to enable additional software functions.

☞ If the license numbers are not entered, then the software will be installed in the DEMO mode, and the functions “Save data”, “Print” and “Transfer setup data” are disabled.

# 2 Installation

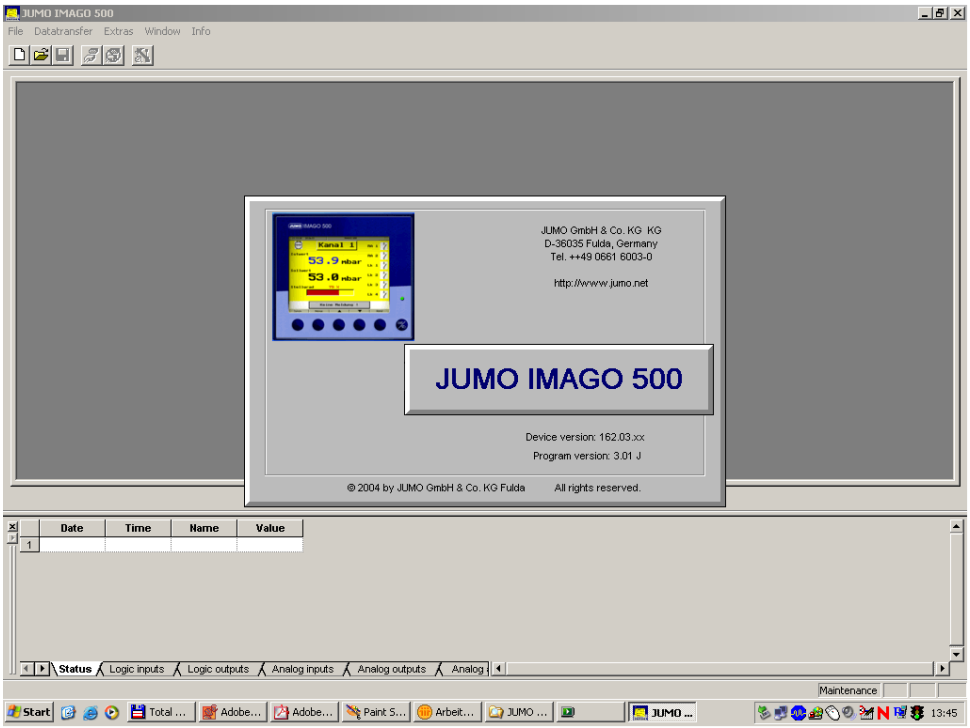
## 3.1 Start program

Call up the program from the well-known Windows start menu.




**Start picture**

When the program has been started, a grey screen opens up with the start picture for IMAGO 500.




### 3.1.1 Move and close windows

The mouse can be used to adjust the window to the required size, or to close the window completely.

**move** — *Window ➔ cascade, tile, arrange icons*

**close** — If, for instance, the function *Window ➔ Teleservice* is activated 2x, the tick disappears and the window will be closed.

## 3.1.2 Access rights

The range of functionality of the setup program can be restricted through the assignment of passwords.

**Specialist**

After a password has been assigned, “Specialist” access inhibits the following functions:

- Device adjustment and test (analog inputs and outputs)
- Test functions
- Undocumented parameters (additional functions)
- Definition of system texts

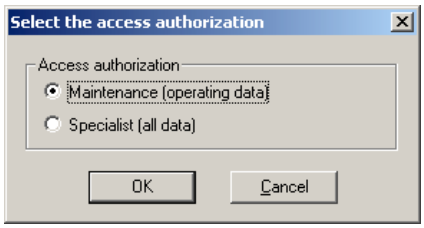
**Password entry**

⇨ Menu bar *File ➔ Password*

If no password is assigned, then “Specialist” access is available without any protection.

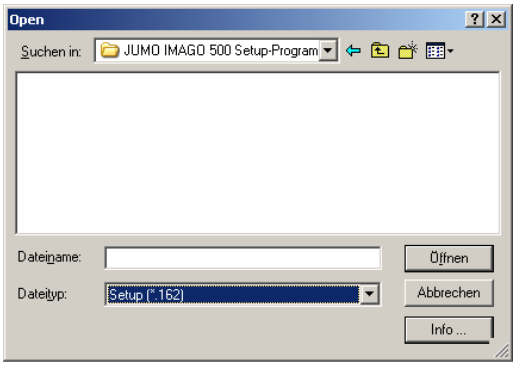
✱ Enter the password

✱ Select “Maintenance” or “Specialist” and click on OK




## 3.1.3 Edit file

**Open file** — A saved file is being opened here.

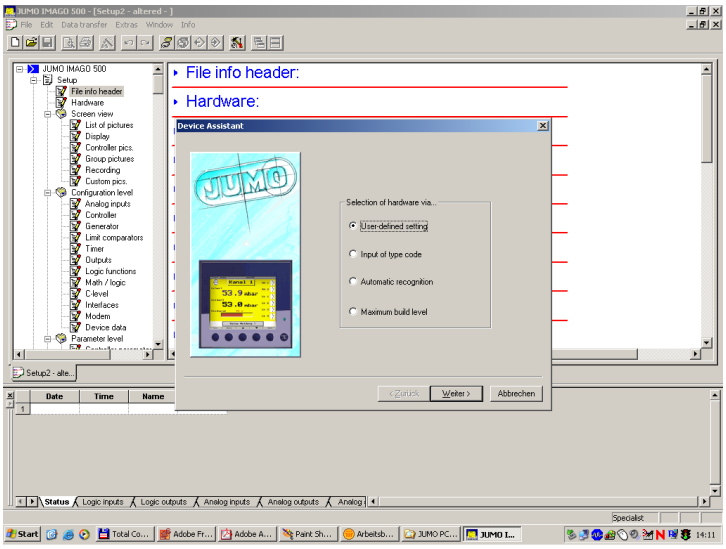


**New file**

This creates a new file

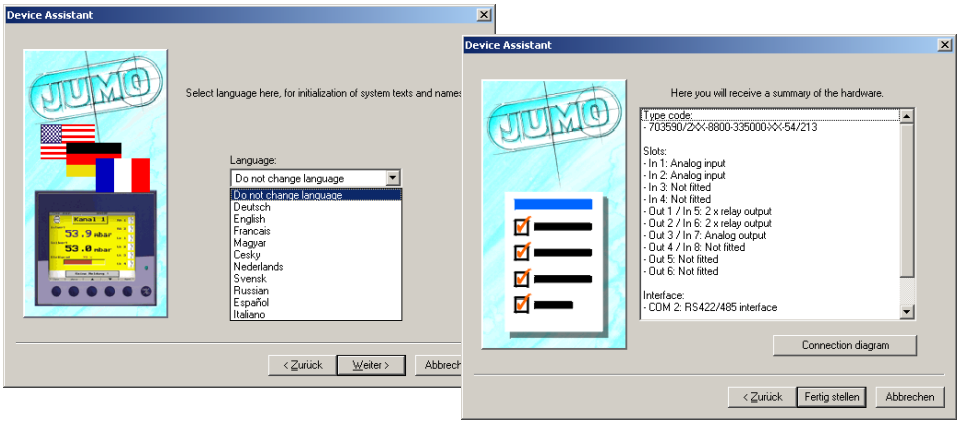
✱ Run *File* ➔ *New*

Since the setup program does not know the hardware configuration of the device, the Device Assistant must be used to enter detailed information.




✱ Click to define how the hardware configuration is to be determined

✱ Click on *Continue*




Dialogs will appear for the slot assignment, extra codes, etc. up to the language selection

✱ Set the default assignment of the language for device texts
(Tip: set the language to “no change”)

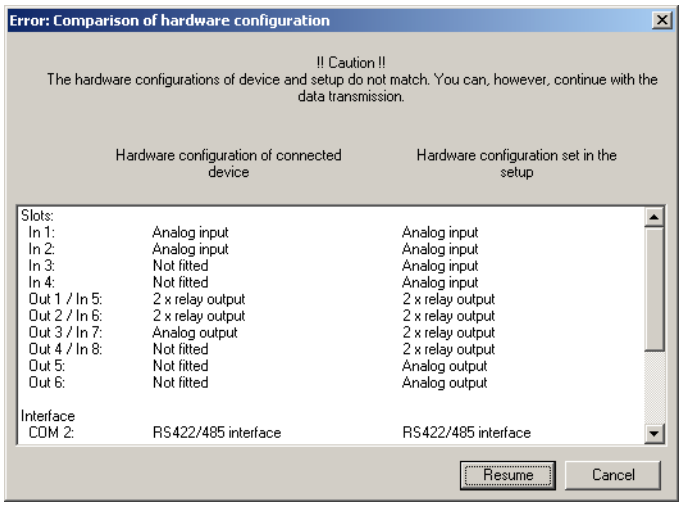
✱ Click on *Continue*

A list of all the hardware components will now appear, with the option of printing out the wiring diagram.

✱ Click on *Finish* and then the Device Assistant will close down

If configuration files are transferred to the device, without the Device Assistant being informed about the hardware configuration, then error messages may be produced!

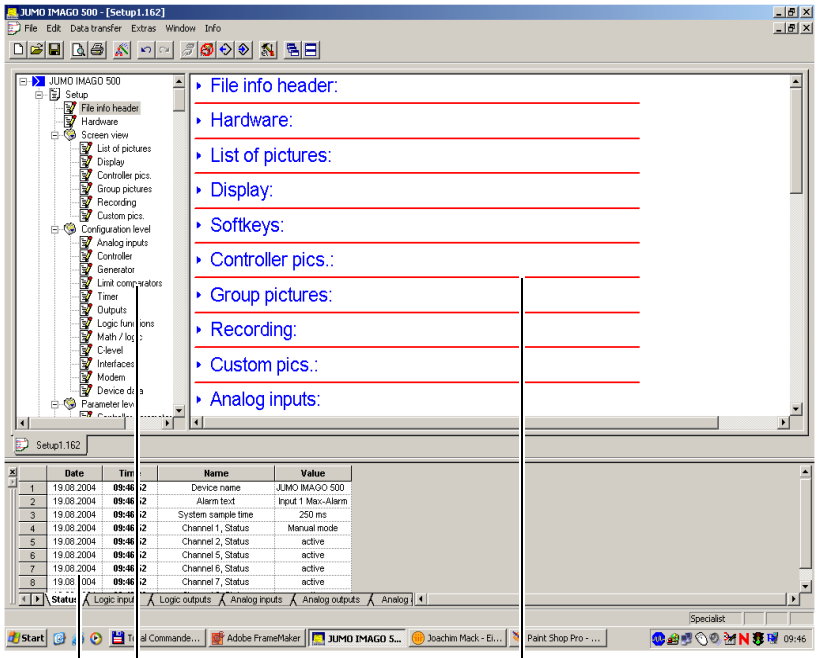
* Start the Device Assistant for new setup programs or after firmware updates
* Save the file




### 3.1.4 Save file

This function can be used to save the data that are entered in a file. The program will request that you enter a name.

## 3.2 User interface windows




**Navigation tree**
for finding the programs and setup settings quickly

**Dialog window**
The settings for the setup and the tables for the program editor are shown here.

**Teleservice window**
for remote monitoring of a device via a modem

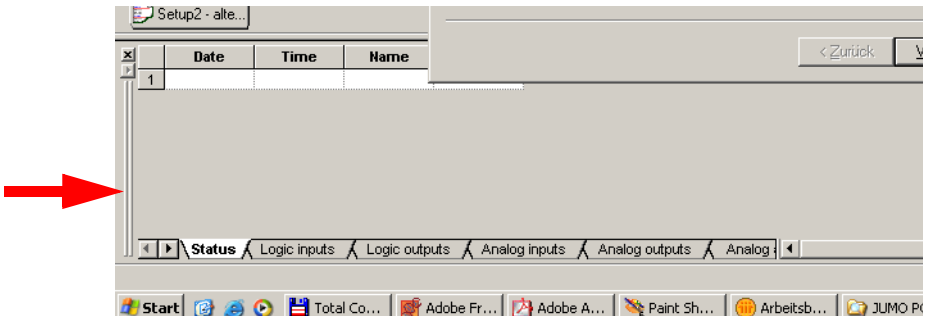
If you click on the arrows next to the submenu titles, the configuration data will be shown for the individual functions. A double click on an individual parameter produces the corresponding input box.

The input boxes for the individual functions can also be accessed through the *Edit* menu.

### 3.2.1 Windows and files

Several files can be edited in the program at the same time.

A separate window is opened for each file. The files are represented in the form of index cards.

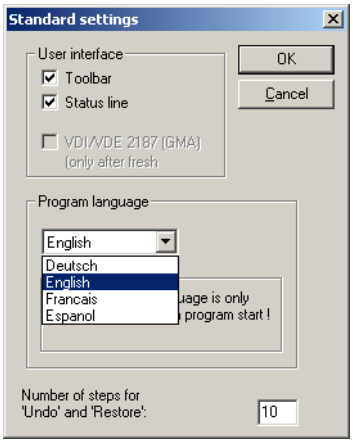


### 3.2.2 Move and close windows

The mouse can be used to adjust the window to the required size, or to close the window completely.

### 3.2.3 Default settings

✱ Run *File* ➔ *Standard settings*




Here you can change the language used for the PC programs.
But the change only becomes active after a fresh program start.

## 3.3 Make/break connection

**Device list**

For communication with one or more devices, the PC interface must be configured and entered in a device list.

Only one connection to one device can be active at a time, and the settings for the device address and the interface parameters must match those for the device.

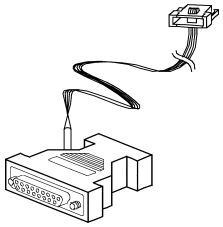
**Network scan**

Automatic search for connections.

The connector of the setup interface must never be disconnected while data is being exchanged over an **active connection**!

Unfavorable circumstances during interface operation could cause a loss of data, for instance because setup data have not been completely transferred to the device.

### 3.3.1 JUMO setup interface via serial interface

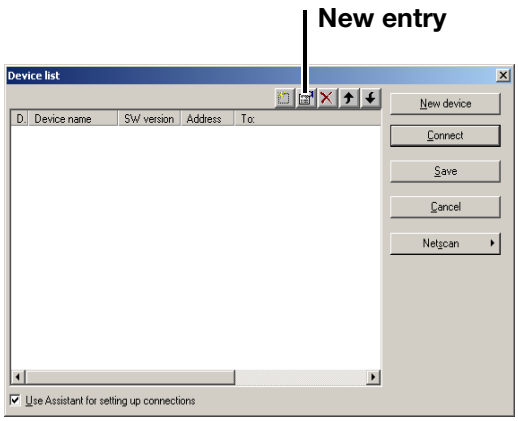


Before data can be transferred, it is first necessary to make a connection between the PC and the device. The simplest method is to make a connection via the JUMO setup interface.

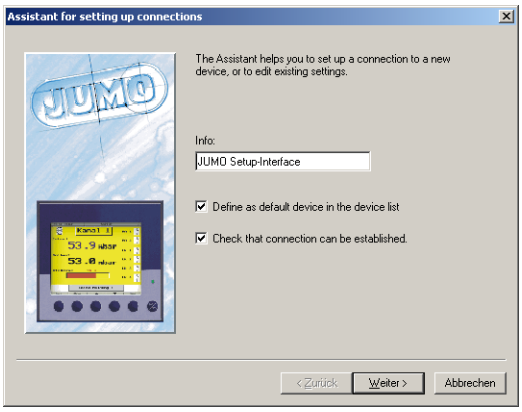
* Connect up the PC interface using the blue setup connector
* Press F2 or

Additional windows will be opened, in which the interface parameters must be entered. This function is also required later, for Teleservice via a modem.

The screenshot shows that, initially, there is no connection.

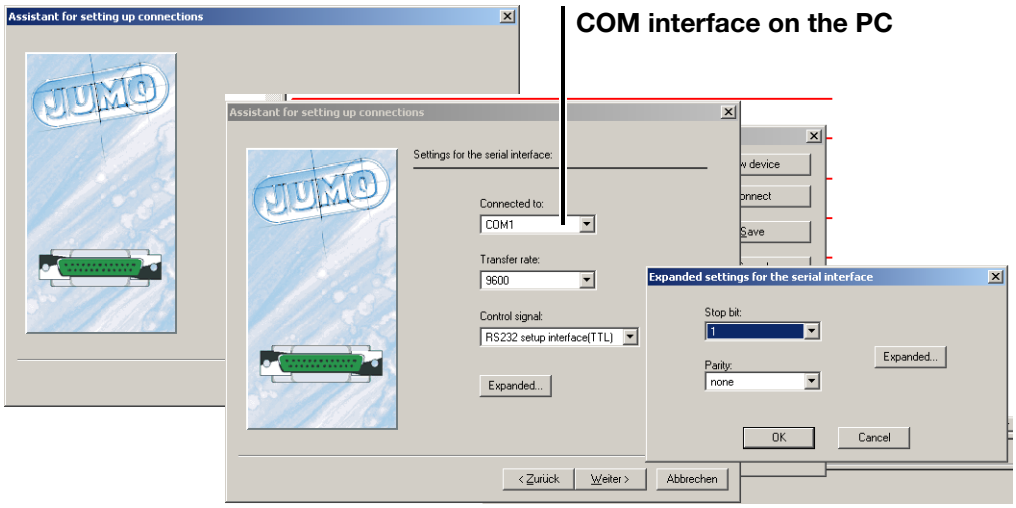



* Click on *New device* or *New entry* .




A descriptive text for the type of connection can be entered here.

✱ Click on *Continue*




✱ Enter the settings for the PC interface

☞ The JUMO setup interface requires the settings: *Serial interface RS232* and as the control signal: *Setup interface(TTL)*.
As soon as connection is made via the blue interface connector, the interface will operate with the following fixed settings:
baud rate: 9600bps, stop bit: 1, parity: none, device address: any.

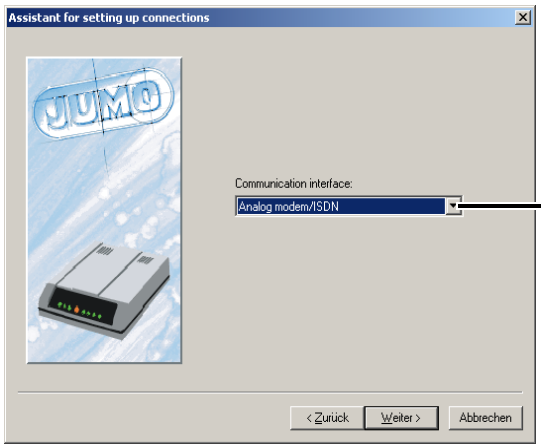
✱ Click on *Continue* until *Finish* appears

When communication has been established, the connection is entered in the device list.

### 3.3.2 Settings for analog or ISDN modem

The settings for the modem connection devices are made here.

⇨ Chapter 6 “Teleservice” and Chapter 4.3 “Interfaces on the PC”




This setting is only available if the Teleservice option has been enabled.

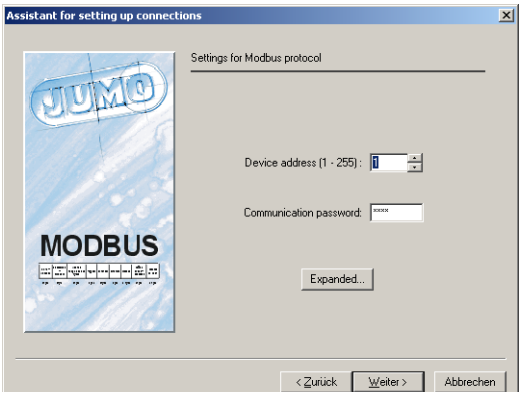
**Stop bit, parity, baud rate**

These parameters must match those that have been programmed in the device.
On the IMAGO 500, via *Menu* ➔ *Configuration level* ➔ *Interfaces*➔ *COM1:Modbus* or *COM2: Modbus*

**Control signal**

The setting depends on the type of connection.

| Type of connection | Setting the control signal |
|---|---|
| JUMO setup interface | Setup interface (TTL) |
| via Spectra interface<br>from RS232 to RS422<br>or from RS232 to RS485 | RS232 or RS422-RTS or<br>RS422-DTR or RS485-RTS or<br>RS485-DTR, depending on the converter |
| JUMO RS485 adapter cable | RS485 adapter cable |




**Device address**

✱ Enter the device address

This parameter must match that which has been programmed in the device.

On IMAGO 500 it is configured through *Menu* ➔ *Configuration level* ➔ *Interfaces*➔ *COM1: Modbus*

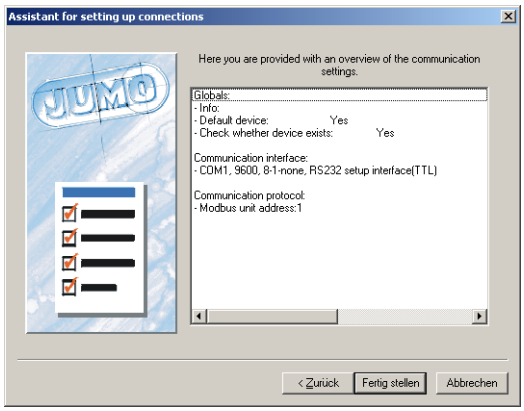
or

➔ *COM2: Modbus*

**Communication password**

The communication password to be entered here for the setup program must match the one in the device!

In the device, the communication password corresponds to the one for the configuration level.




✱ Click on *Finish*

If an interface converter (Spectra I 7520A/ISA) is used, then RS232 must be set!

As soon as the device is connected to the PC, this can be recognized by the connection symbol shown in grey.

### 3.3.3 Exit program

✱ Click on *File* ➔ *Close*

A security query then appears, as to whether the current changes should be saved, after which the program breaks any existing connection to the device and exits the program.

## 4.1 Device Assistant

Whenever it is necessary to create a new configuration file, the setup program must first be informed about the hardware setup.
The options for achieving this are:

**User-defined setting**

In this case, the hardware setup is first set as a default to be that for the standard device (see data sheet). The assignment of the expansion slots can be altered manually, in pull-down menus.

**Entry of the type code**

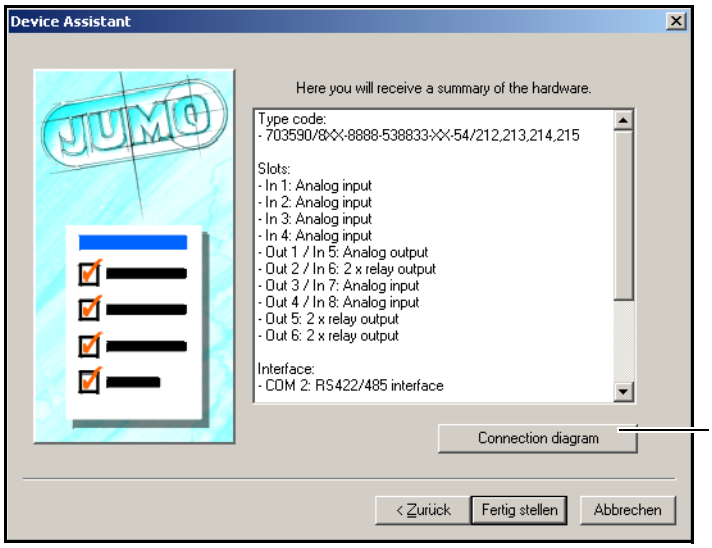
The hardware setup is defined by entering the type code.

**Automatic detection**

Just the hardware setup is read out from the device. To do this, a device must be connected and the interface must be correctly configured on the device and the PC.

**Maximum build level**

This means all the expansion slots are occupied, as shown in the screenshot.

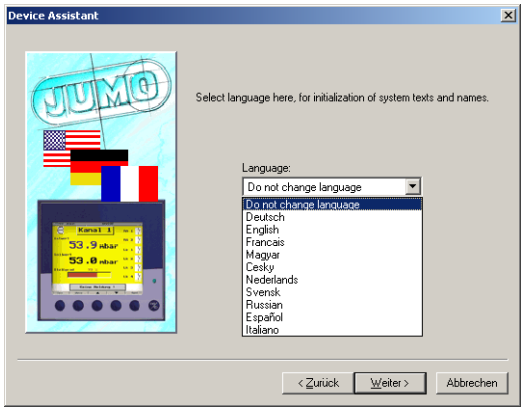



Shows the back panel of the IMAGO 500, and can be printed out.

### 4.1.1 Hardware

✱ Double-click on *Hardware*, and the Device Assistant will be initiated.

These settings will affect the depictions in the program.




✱ Press *Continue* to enter all additional information.

## 4.2 Interfaces on the IMAGO 500

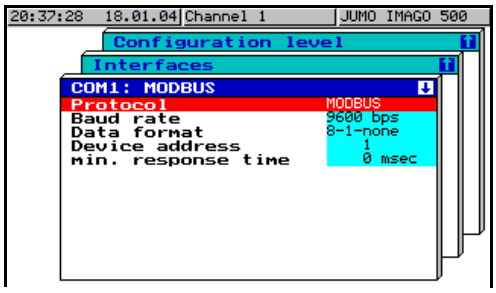
3 interfaces are available for selection, through which a PC can be connected to the device and PC programs can be transferred.

**Setup interface**

The PC interface connector is blue, and can be found on the top panel of the device.

The interface parameters are set up in the device under:

*Menu* ➔ *Configuration* ➔ *Interfaces* ➔ *COM1:Modbus*




**RS422/485**

The interface (COM1 RS422/485) for Teleservice and visualization is electrically isolated, and connected through the screw terminals 29 — 32 on the back panel.

When the setup interface connector is plugged in,
**data transmission on COM1 is switched off**.
If two interfaces are operated simultaneously, then the 38400 bps baud rate for an individual interface is not permitted.

**Interface COM2 (option)**

The MODBUS interface card (COM2 RS422/485) is an extra code option, electrically isolated, and connected through the screw terminals 25 — 28.

⇨ Wiring diagram in Data Sheet 70.3590 or Operating Manual B70.3590.0

The interface parameters in the PC and the device must match exactly, otherwise it will not be possible to make a connection!

## 4.3 Interfaces on the PC

All the available interfaces can be used on the computer.

**Settings**

The settings at the PC end are entered in *Device list* ➔ *Properties* ➔ *Properties*.
⇨ Chapter 3.3 “Make/break connection”

**Settings for Teleservice via Modem**

These settings are described in Chapter 6 “Teleservice”.

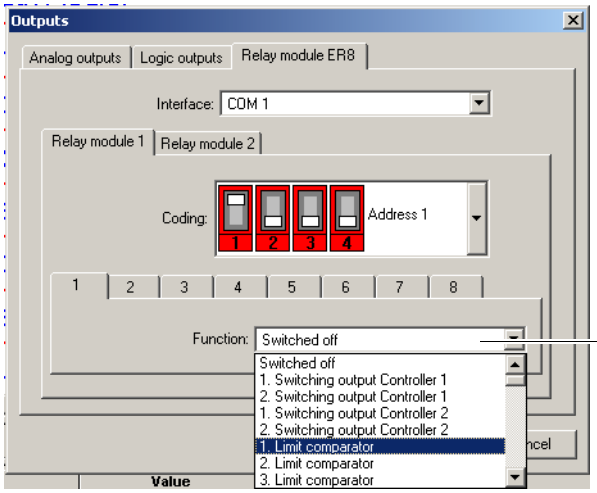
**Settings for the universal interface**

At the PC end, network operation via the RS422/485 requires an interface converter from RS232 to 422/485 or:
an interface card for RS422/485, with 2, 4 or 8 interfaces, built into the PC!

### 4.3.1 Connection of the external relay module ER8 (option)

The external relay module expands connected devices by 8 relay outputs with changeover contacts. The relay functions are configured in Chapter 4.6.5 “Outputs”.

Communication with up to two relay modules is made jointly through a **single** RS485 serial interface, with a fixed transmission rate of 9600 bps and different module addresses.



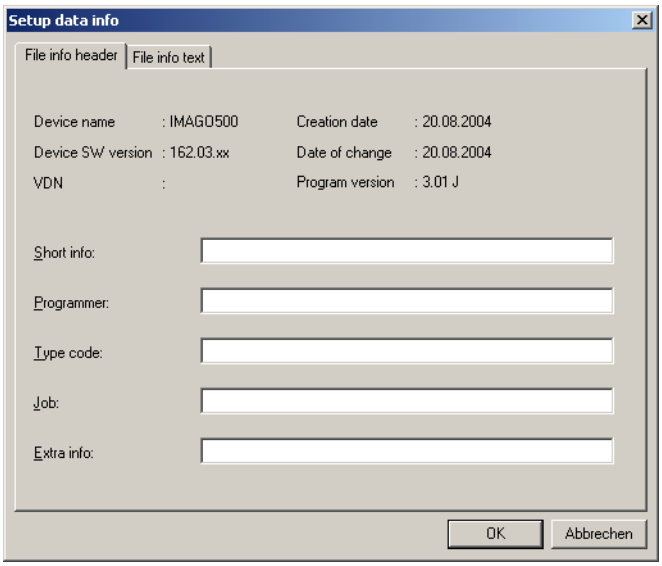

⇨ see Operating Manual B70.3590.0

## 4.4 File info header

Here you can enter general information about the configuration file in the boxes that are provided.

**Text entry**

⇨ Chapter 4.10 “File info text”



## 4.5 Screen representation

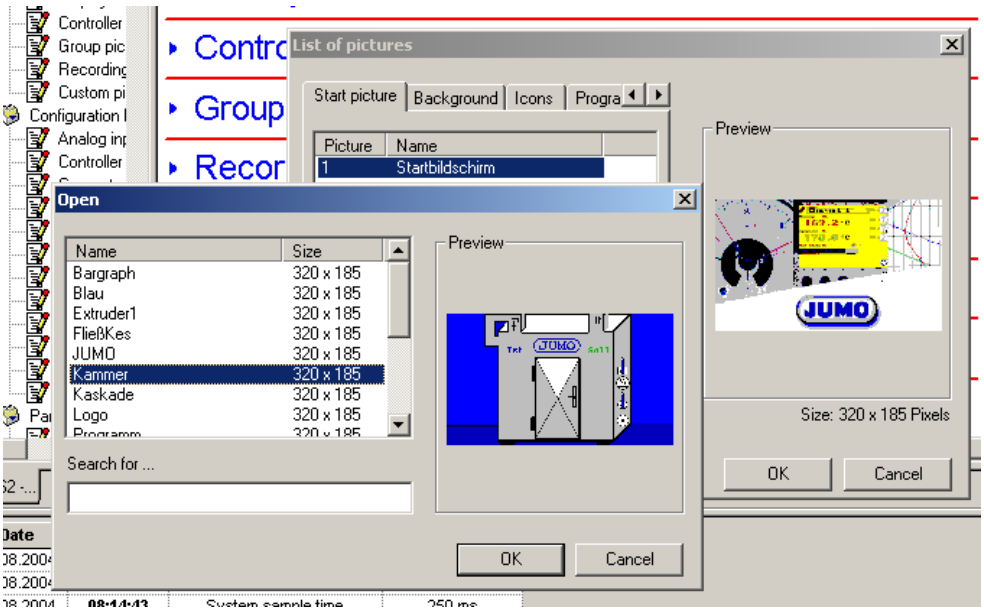
### 4.5.1 List of pictures

This is a selection of start pictures, background pictures, icons and program icons, which are required for the display layout in Chapter 4.5.8 “Custom pics.” and are transferred to the device.
These bitmaps can be chosen from a comprehensive library, to which you can also add pictures that you have created yourself.

⇨ Chapter 7.1 “Bitmap library”

✱ Double-click on the *List of pictures*

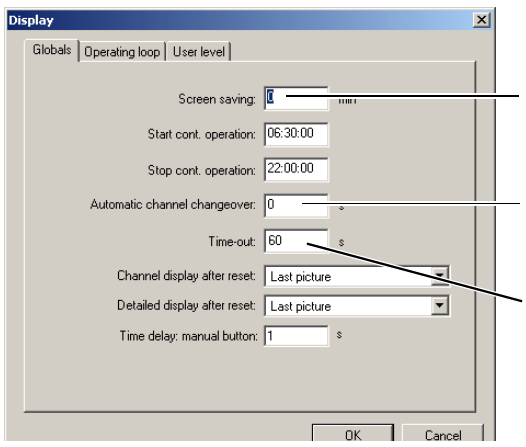
✱ Click on *Edit*




A selection of pictures appears from the library

### 4.5.2 Display, globals

Global settings for the color display are made here.



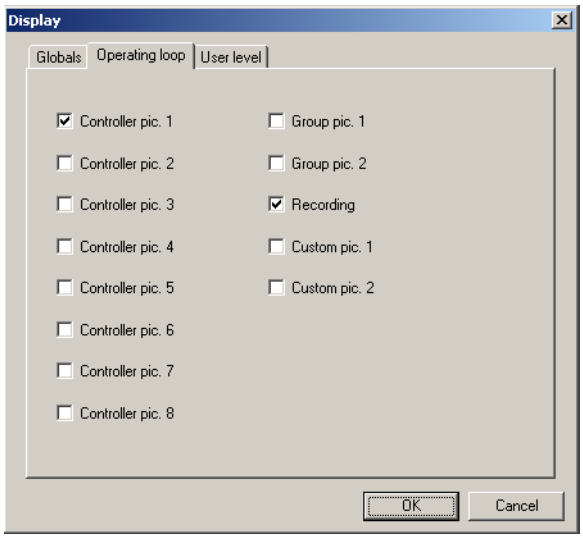

0 means the screen is always on.
If a time is entered, the screen is switched off after this time has elapsed.

After this time, the display changes to the next screen in the operating loop.

After this time, the display changes to the initial setting.

### 4.5.3 Operating loop display

This tick determines how many different screen pictures are permitted in the operating loop of the device. In this way, unused controller channels and customized pictures can be switched out of the display.




### 4.5.4 User level display

Here, up to 8 different parameters from the MODBUS address table can be collected together to form what is known as a user level.

They are shown or entered on the device in this user level.

**Example**

The setting for the dead band of Controller 1 is to be shown.

**Text entry**

⇨ Chapter 4.9.4 “Texts”

**MODBUS addresses**

⇨ The MODBUS address table is provided as an attachment in a separate pdf file on the installation CD.

The value from the MODBUS address table must be incremented by 1 when presenting variables of data type “Float”!

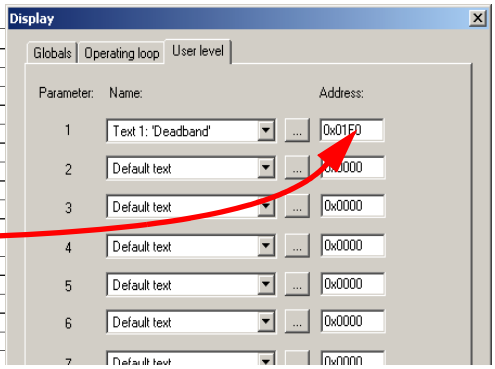
* Increase the hexadecimal value (data type “Float“) 01EF from the MODBUS address table by 1
* Enter the hex value 01F0 in the setup program

## Enter a hex address

**MOD-Bus-Adressen für Parameter der Anwenderebene**

**1. Regler**

| Adresse | Datentyp | Zugriff | Signalbezeichnung |
|---|---|---|---|
| Regler 1 | | | |
| 0x01E6 | INT | R/W | REGLERART |
| 0x01E7 | INT | R/W | WIRKSINN |
| 0x01E8 | INT | R/W | TUNE AUSGANG1 |
| 0x01E9 | INT | R/W | TUNE AUSGANG2 |
| 0x01EA | INT | R/W | TUNEART |
| 0x01EB | INT | R/W | HANDBETRIEB GESPERRT |
| 0x01EC | INT | R/W | TUNE GESPERRT |
| 0x01ED | INT | R/W | KASKADE |
| 0x01EE | INT | R/W | Sollwert WIN |
| 0x01EF | FLOAT | R/W | TOTBAND |
| 0x01F1 | FLOAT | R/W | FC1 |
| 0x01F3 | FLOAT | R/W | FC2 |
| 0x01F5 | FLOAT | R/W | NORMIERUNG STELLGRAD |
| 0x01F7 | FLOAT | R/W | NORMIERUNG STELLGRAD |
| 0x01F9 | INT | R/W | HAND STELLGRAD |

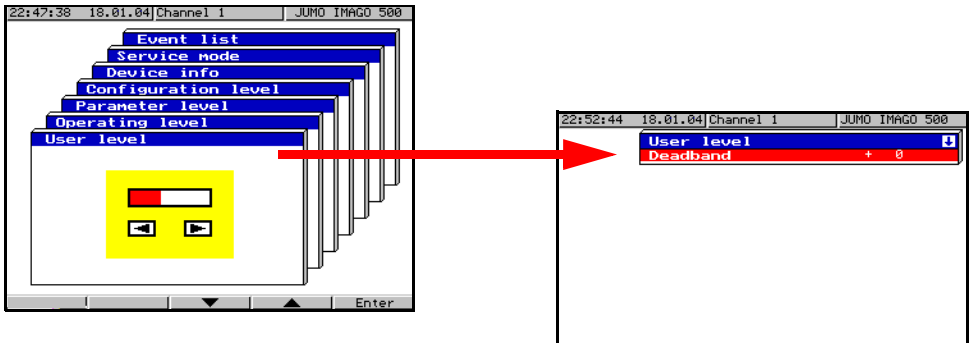



If no texts are defined, the default entry appears “Text 1 — Text 100”

## Display on the device

✱ Transfer data to the device

A new menu level (with the name user level) is now available in the device, in which a maximum of 8 parameters can be defined from the MODBUS address table.

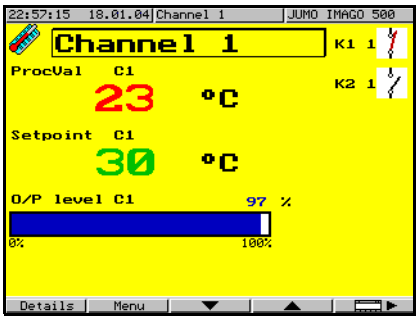


## 4.5.5 Controller diagrams for Channel 1 — 8

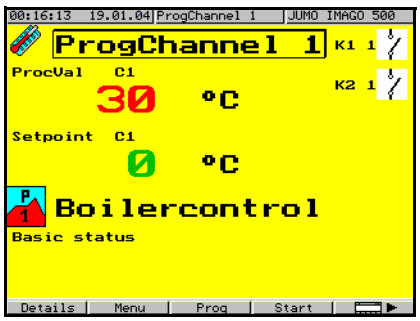
8 different controller diagrams are available. The settings for each element of the diagram are highlighted in yellow.

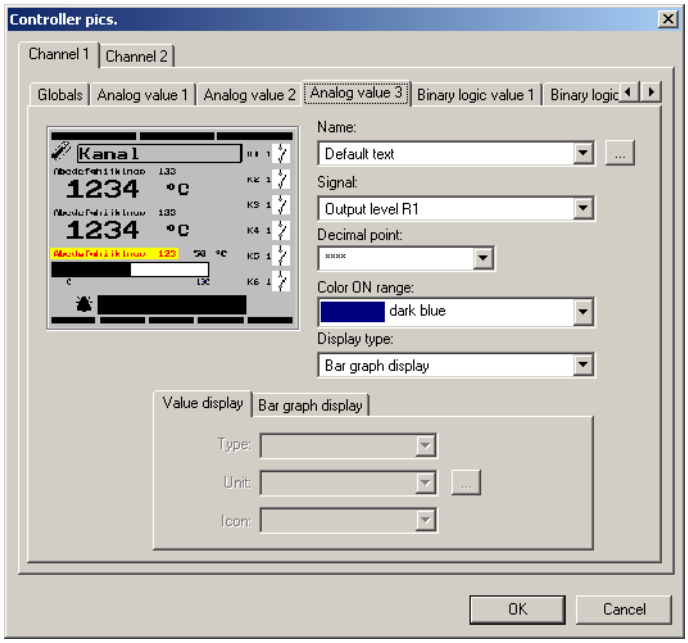
The program-controlled and fixed-setpoint controllers differ in the appearance of their controller diagrams.

**Fixed-setpoint controller**




**Program controller**



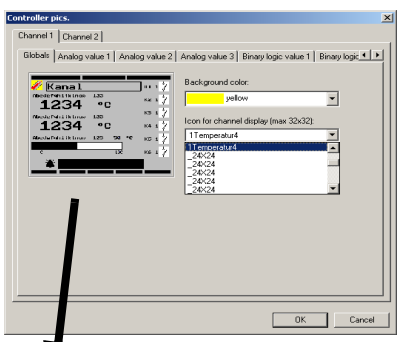



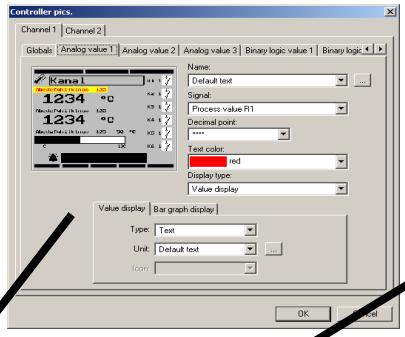

The appearance of these diagrams can be freely combined with respect to the text display, variables or display colors.

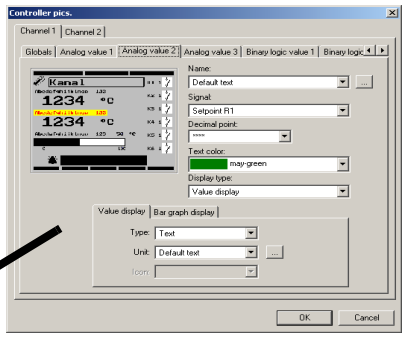
**Background color and channel icon**

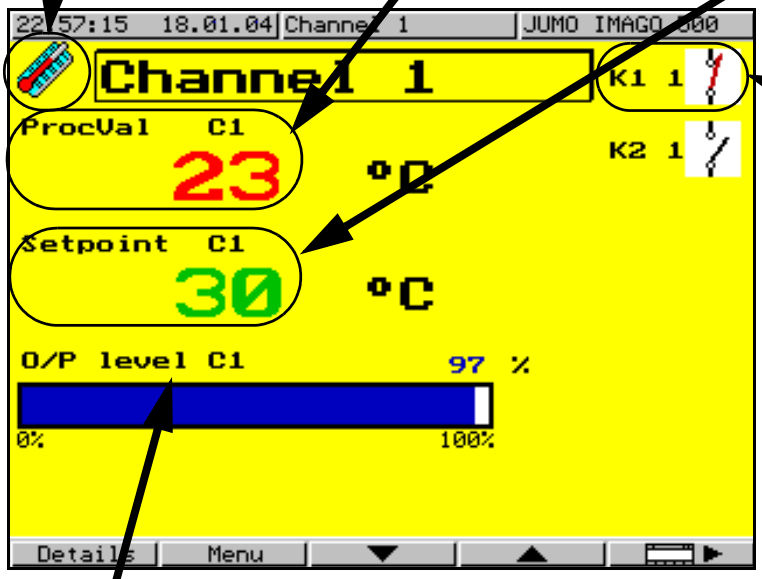
Title and color
Text for **Analog value 1**

Title and color
Text for **Analog value 2**

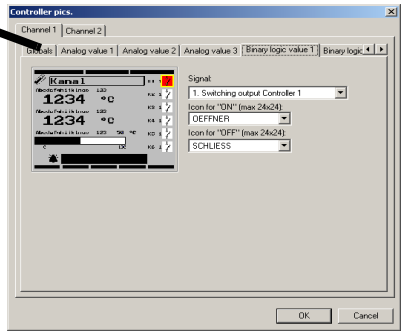




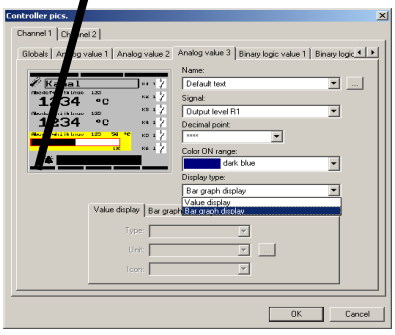


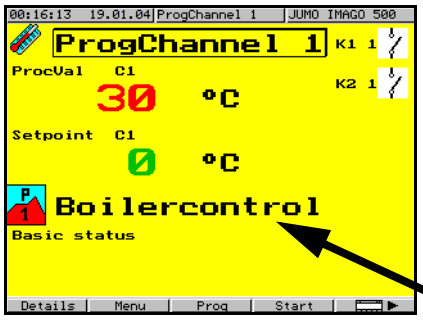



Title and color
for **Binary logic value 1 — 6**

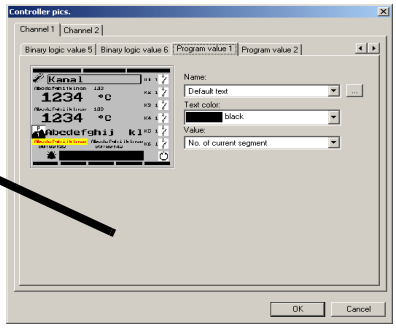


Title and color
Text for **Analog value 3**






Title and color
for **Program value 1 — 2**
(for program controllers)



If you want to show your own text formulations here, or units that are non-standard, then they must be entered beforehand. [...]
Only default (standard) texts appear (Texts 1 — 100).

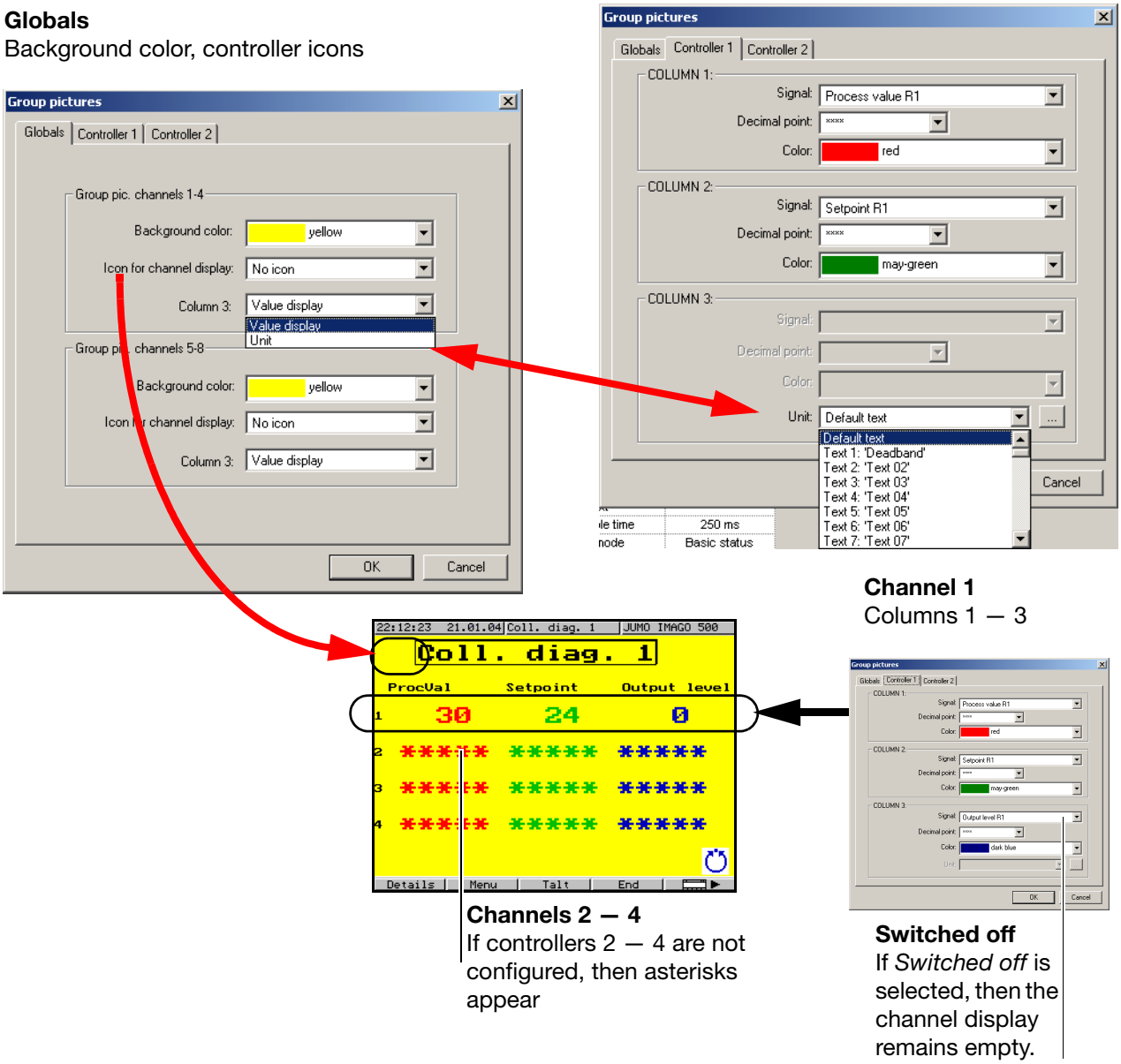
⇨ Chapter 4.9.4 “Texts”

## 4.5.6 Collective pictures

Controllers 1 — 4 and 5 — 8 are grouped in a collective picture.

✱ If *Unit* is selected, then a unit can be shown for the representation of the controller.

**Globals**
Background color, controller icons




**Channel 1**
Columns 1 — 3

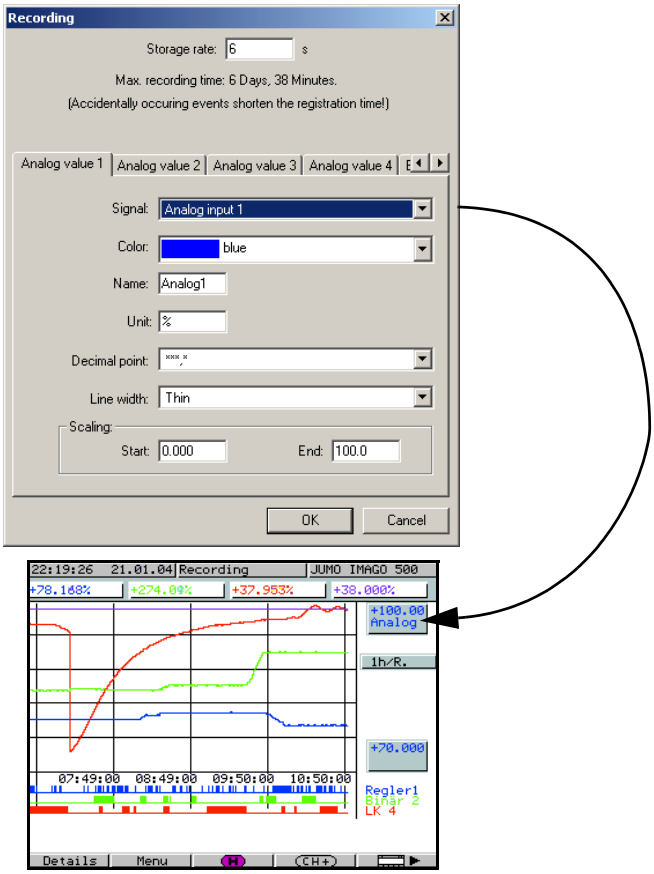



**Channels 2 — 4**
If controllers 2 — 4 are not configured, then asterisks appear

**Switched off**
If *Switched off* is selected, then the channel display remains empty.

### 4.5.7 Recording

This extra code can be used to record the progress of 4 analog variables (channels) and 3 logic signals (event tracks).




✱ Select the signals to be recorded.

The data for the recorded channels are stored in a ring memory in the device, and can either be viewed directly on the device or fetched by the PCC supplementary software and evaluated by PCA 3000.

⇨ see Operating Manual B 70.3590.0

or

⇨ see Operating Manual B 95.5095 PCC Communications Software

The recording function is an extra code option, and must be enabled in the device.

⇨ Chapter 7.3 “Enable device options”

## 4.5.8 Custom pics.

The custom pics. 1 and 2 in the IMAGO 500 can be freely laid out to suit your wishes.

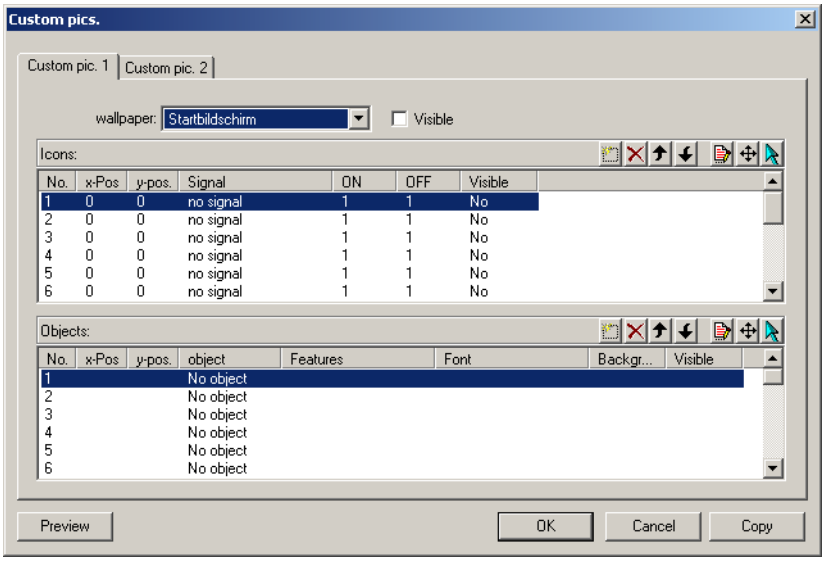
They can contain icons in bitmap format, frames, areas, texts, analog and digital values in various colors and sizes. The positions of the picture elements are set up here.

Before starting to lay out the picture, the icons and background pictures must be included in the library and the “List of pictures”.

⇨ Chapter 4.5.1 “List of pictures”

There are no default customer pictures in the factory setting.

✱ Double-click on *Custom pics.*




The illustration shows that there are no tick marks to be seen for background pictures, no icons have been placed, and no objects have been inserted.

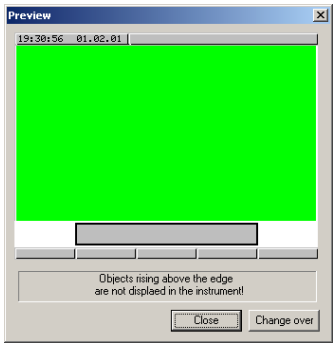
**Background picture (“wallpaper”)**

✱ Click on the selector arrow for background pictures and select a picture

✱ Mark the “visible” field

**Active layout area**

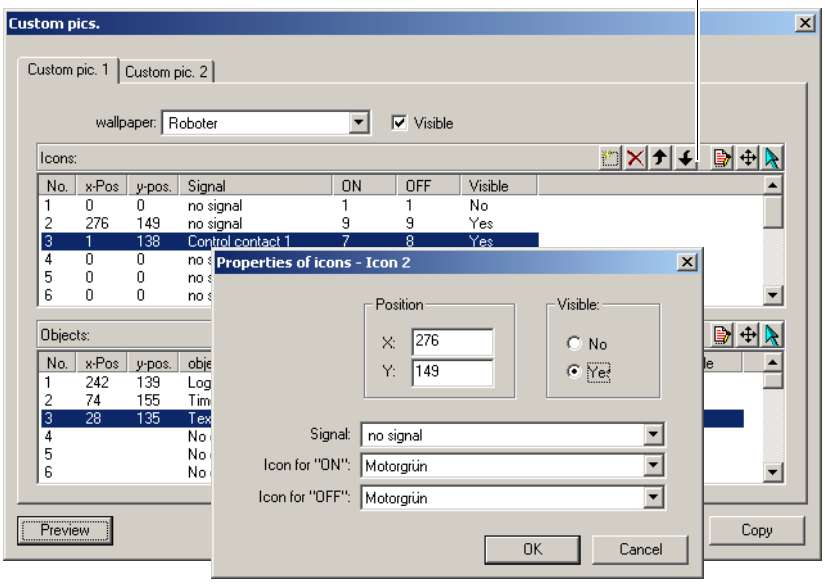
The picture elements can only be placed in the active green area, and must not protrude beyond the edges, otherwise they cannot be displayed on the device.




**Insert new icon**

✱ Double-click on the table entry *Icon*

**Edit picture element**
This function can be used to insert, delete, move and edit table entries




✱ Set the functions you require for the icon, mark *Yes*, and set the switching behavior

✱ Confirm with OK

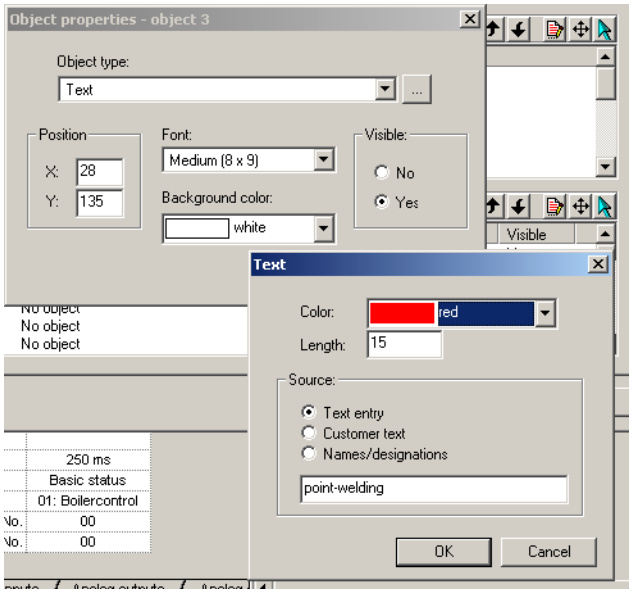
**Insert new object**

Objects can be:

- Logic objects: Two different texts, changing from one to the other according to the switch status
- Text objects: Text with a defined color, size and background color
- Analog objects: Analog value display as numbers, for instance a Pt100 analog input
- Time objects: Segment time, actual time or program time in the format hh:mm:ss
- Area objects: Colored area with a defined height and width
- Frame objects: A border with a defined color and thickness

- Bar graph display: Analog display in the form of a bar graph

✱ Double-click on the table entry *Objects*




**Preview**

Use *Preview* to see a preview picture that corresponds to the display that will be seen later on the color screen of the device. Measurements are simulated with a continual string of numbers 123... , because no real measurements are available from the device. Texts are represented by ABC. Use *Switch* to switch over the two-state logic signals, such as relays.

**Mark icons or objects**

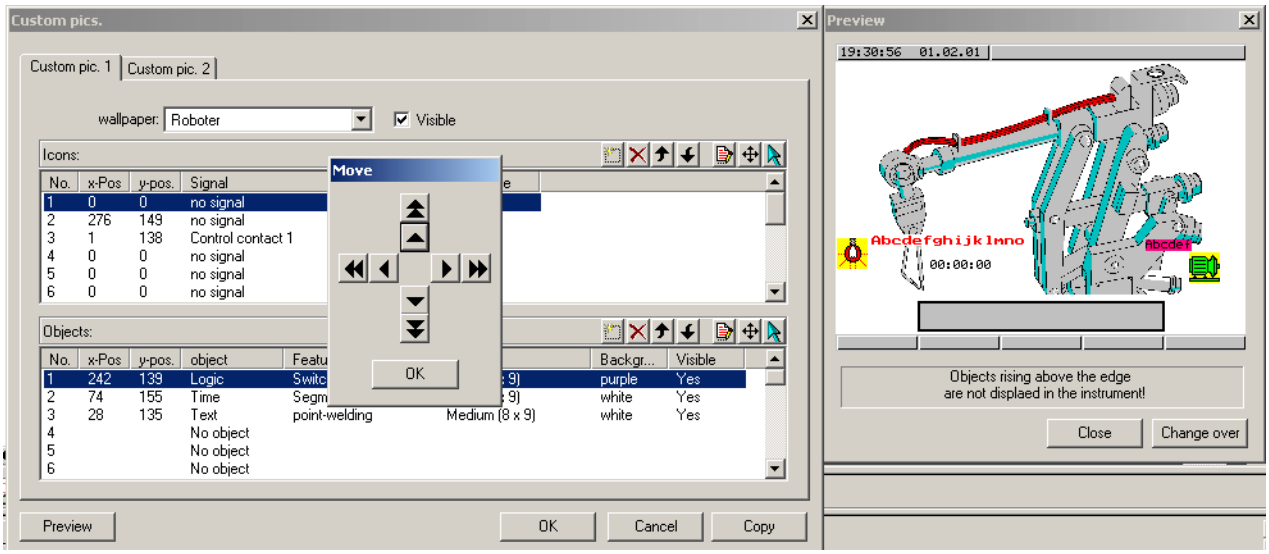
✱ Click with the right mouse button on the table entry

In the preview, the object is indicated by a hand with a pointing finger.

**Move icons or objects**

✱ Click with the right mouse button on the table entry

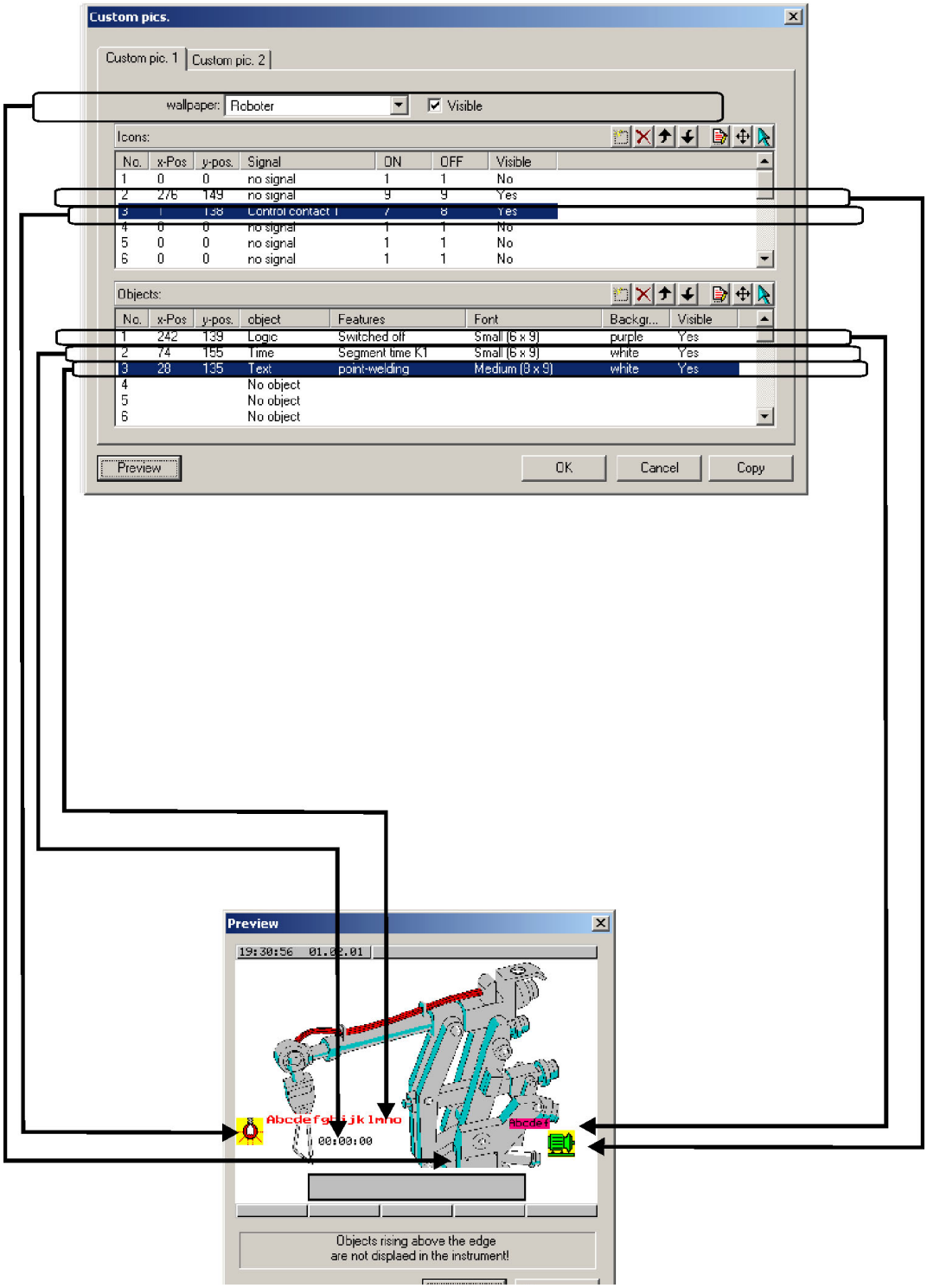
The object can now be moved in all directions, by using the arrow keys.




✱ Accept the settings with OK

**Example**

The picture elements are explained in the following example.




**Example**

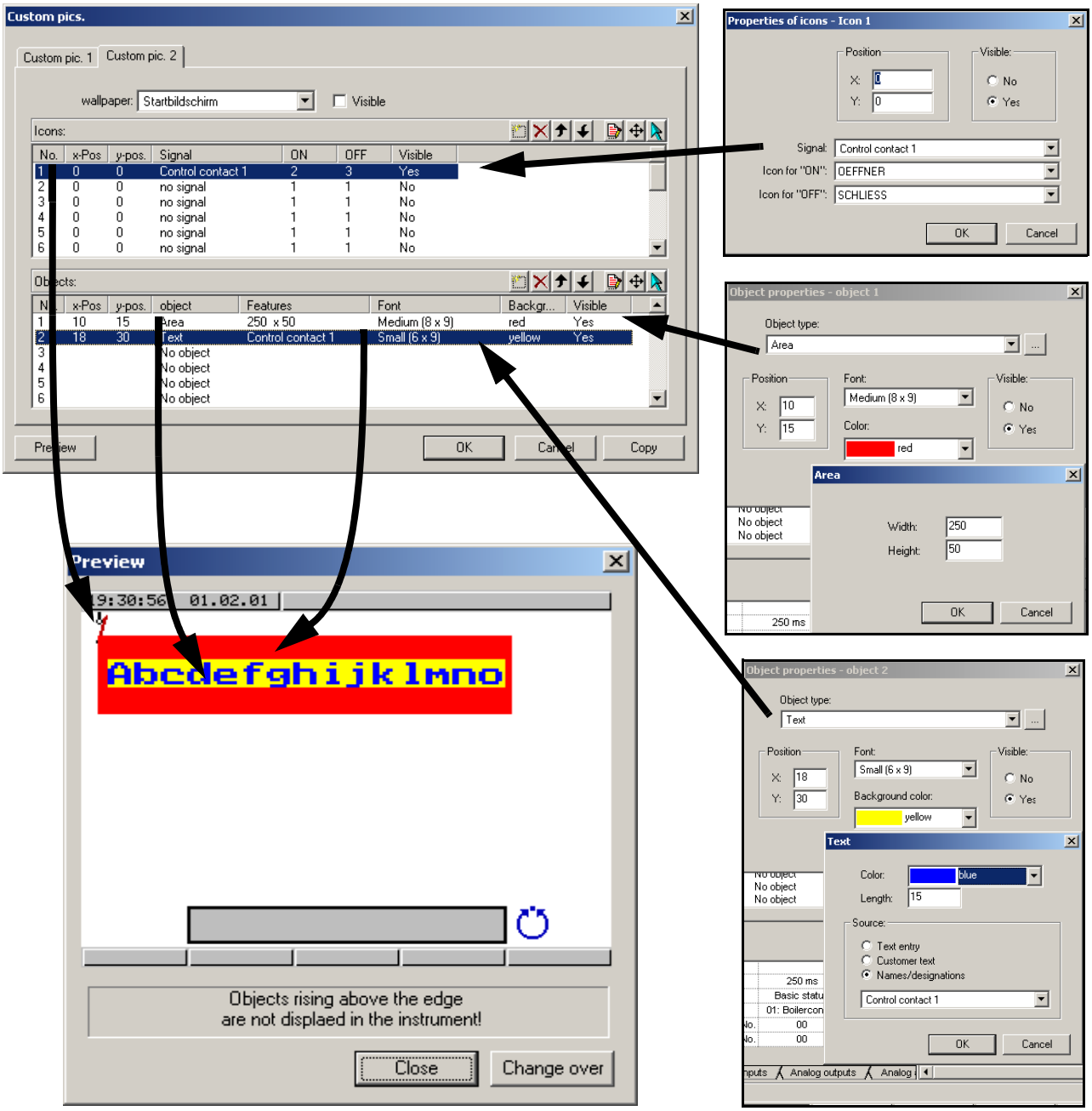
A spot-welding robot is applied as a background picture. Logic input 1 monitors the welding procedure, indicating it as a lightbulb icon.

The segment time for spot-welding is shown below.

The green motor on the right uses two texts to indicate the direction of rotation of the robot arm.

**Overlapping objects**

If an object is below another in the list, then it will also overlap an object that is below it on the color screen. A double-click on the rows in the table produces other setting details, so that you can, for instance, place a blue text with a yellow background on top of a red frame.




* Accept the settings with OK

## 4.6 Configuration

### 4.6.1 Analog inputs

⇨ see Operating Manual B70.3590.0

### 4.6.2 Controllers 1 — 8

⇨ see Operating Manual B70.3590.0

**Sampling time**

The sampling time can vary according to the number of controllers that are active.

⇨ Operating Manual B70.3590 Chapter 7.11 *Device data* ➔ *System sampling time*

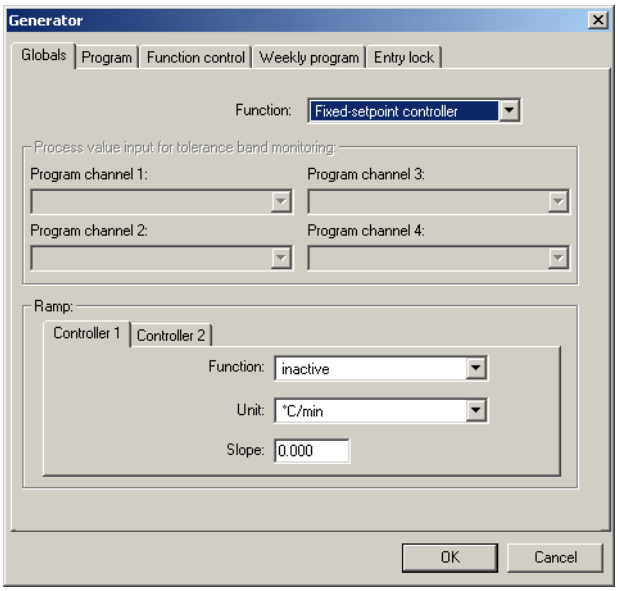
**Activating the controllers in the basic status**

⇨ Chapter 4.9.3 “System state, basic status/manual”

### 4.6.3 Generators

**Globals: Fixed-setpoint controller**

This controls to a fixed setpoint value, which can also be provided with an approach ramp.



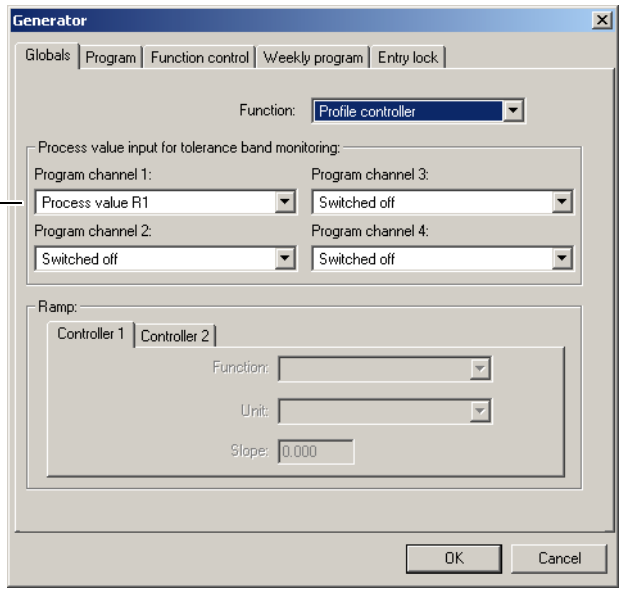

**Globals: Profile controller**

Profile (program) controllers, on the other hand, control to a setpoint profile that is entered in the program editor.

⇨ Operating Manual B70.3590 Chapter 7.3 *Generator* ➔ *Function*

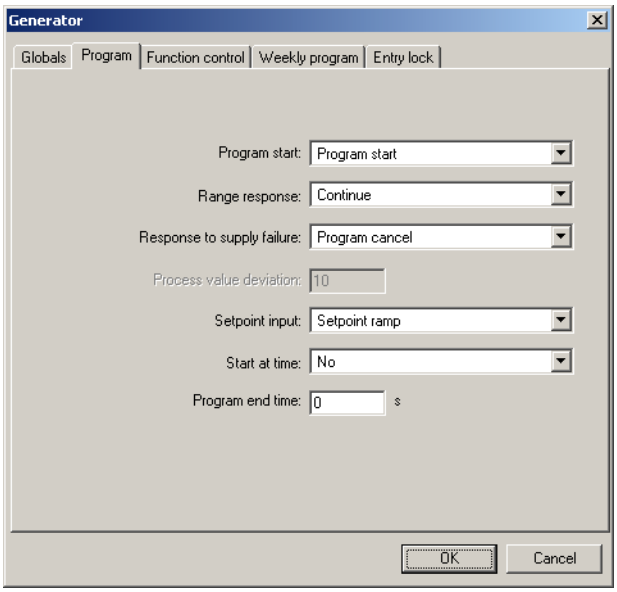
All program controllers are started in synchronism.

The value to which the tolerance band and measurement range monitoring of the program channel is referred.




**Program**

Here you define what the “generator” should do in the event of a measurement overrange or underrange, supply failure, or at the end of the program.



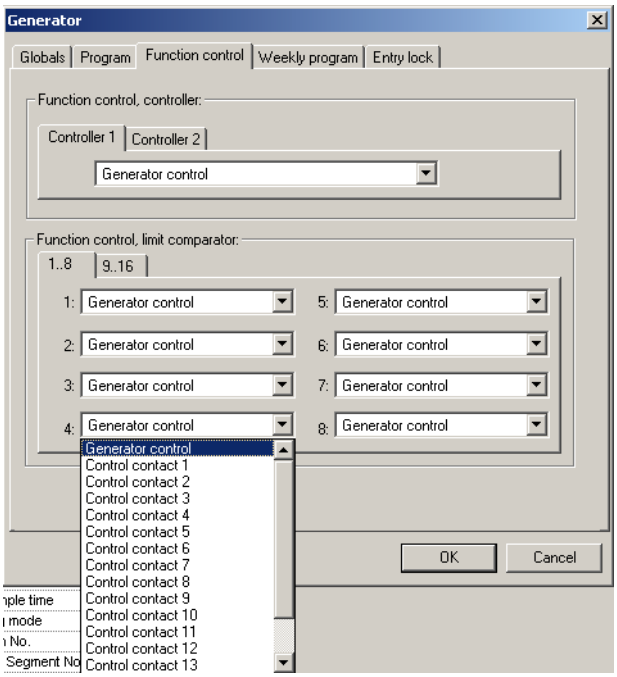

**Function control**

Defines when the controllers and limit comparators are active.

⇨ Operating Manual B70.3590.0 Chapter 7.3 *Generator* ➔ *Function control*

**Generator control:** Controllers and limit comparators are active when a program is running (automatic operation), otherwise they have the basic status as defined for the state of the system.

**Contact control:** Controllers and limit comparators are only active if the control contact is in the ON state.




**Weekly program**

Only available when *Profile controller* is set!

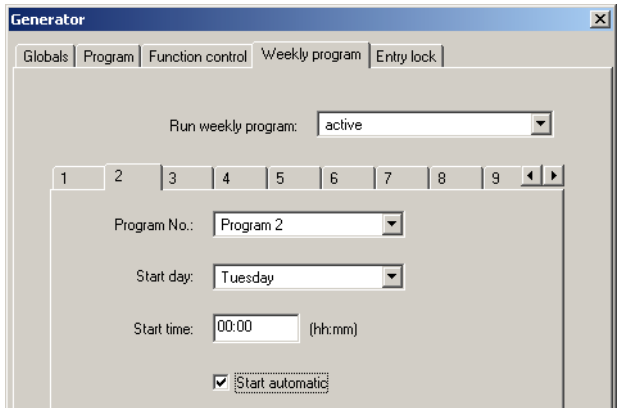
With a weekly program you can enter 14 different starting times for programs on different days of the week. You can set the:

- program number
- start day
- start time

**Several programs starting on the same day of the week**

The first week is pre-assigned with 1 — 7. If several programs are to start on the same day, then the start times 8 — 14 are available for this purpose.

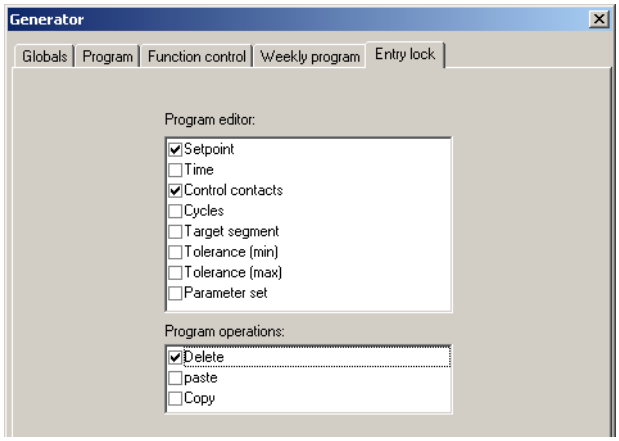
Please take care that a program is finished before another program is started on the same day.




**Entry inhibit**

This function is used to prevent entries being made to the device.

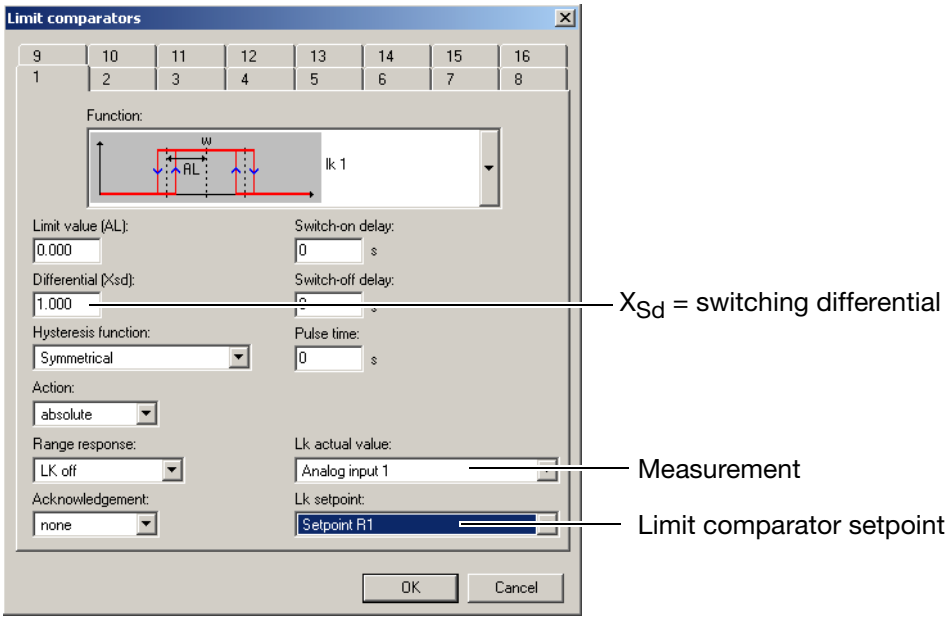
The inhibit function can only be canceled again through this same setup program.



### 4.6.4 Limit comparators

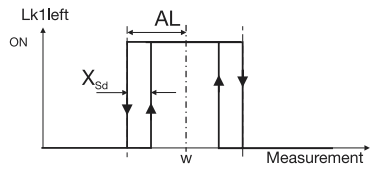
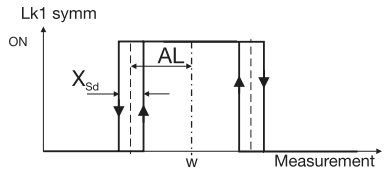
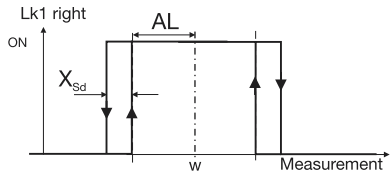
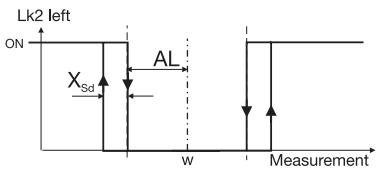
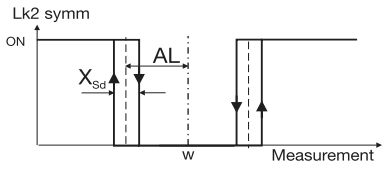
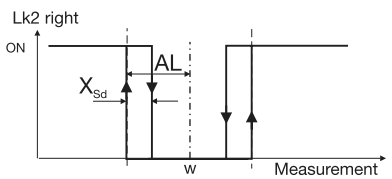
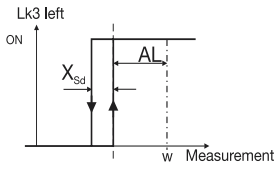
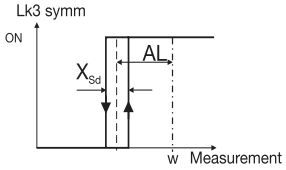
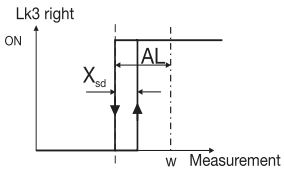
Limit comparators (threshold monitors, limit contacts) can be used to monitor an input signal (process/actual value for the limit comparator) against a fixed limit or threshold (the setpoint for the limit comparator). When a limit is exceeded, a signal can be output or an internal function initiated. 16 limit comparators are available.

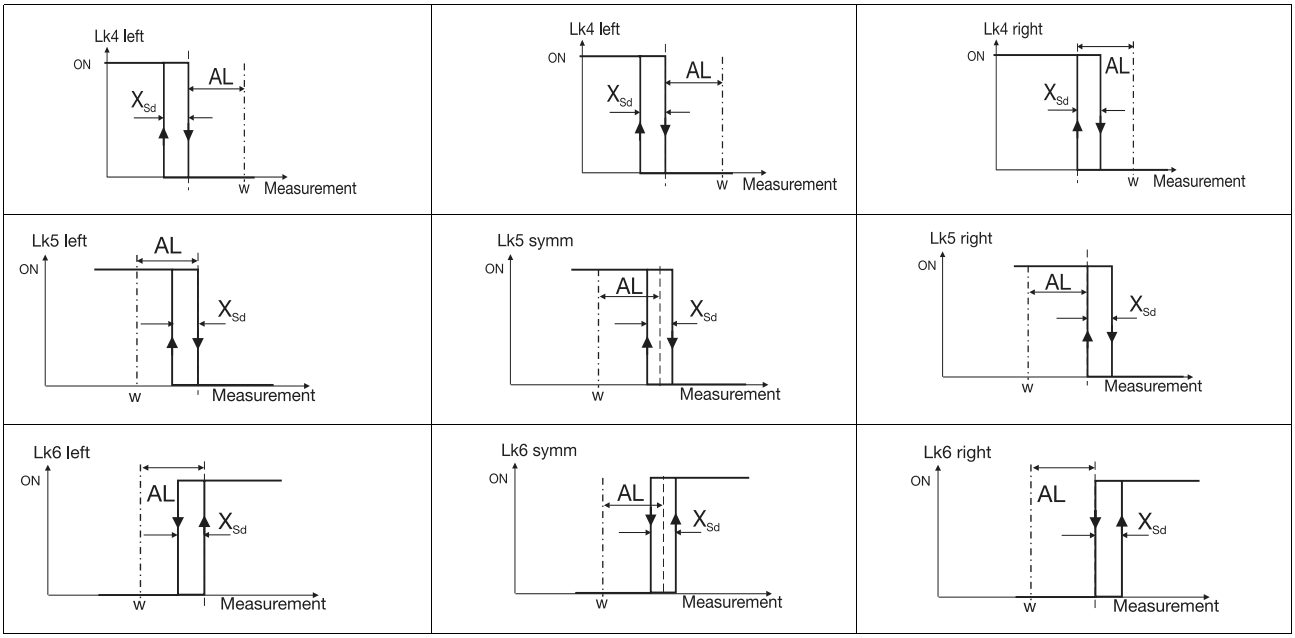
⇨ see Operating Manual B70.3590.0



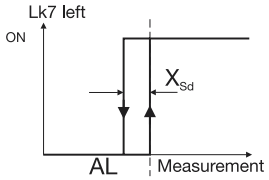
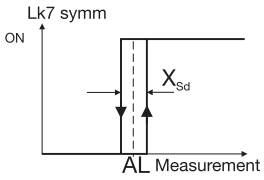
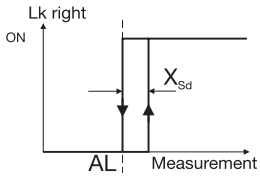
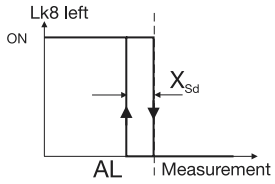
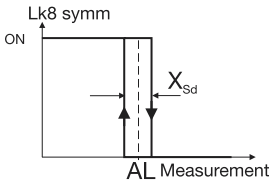
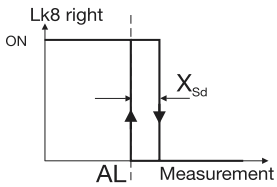

**Limit comparators lk1 — lk6**

The measurement signal that is set is monitored with respect to the active limit comparator setpoint (w) plus a spacing AL.

| asymmetrical, left | symmetrical | asymmetrical, right |
|---|---|---|
|   |   |   |
|   |   |   |
|   |   |   |




**lk7/lk8** The measurement signal that is set is monitored with respect to the fixed value AL.

| asymmetrical, left | symmetrical | asymmetrical, right |
|---|---|---|
|  |  |  |
|  |  |  |



## 4.6.5 Outputs

Output types are: analog outputs, logic outputs, and those on the relay module ER8, where the controller and control signal outputs can be produced.

☞ The time-dependent behavior of the switching outputs from controllers 1 — 8 cannot be edited.

⇨ see Operating Manual B70.3590.0

### 4.6.6 Logic functions

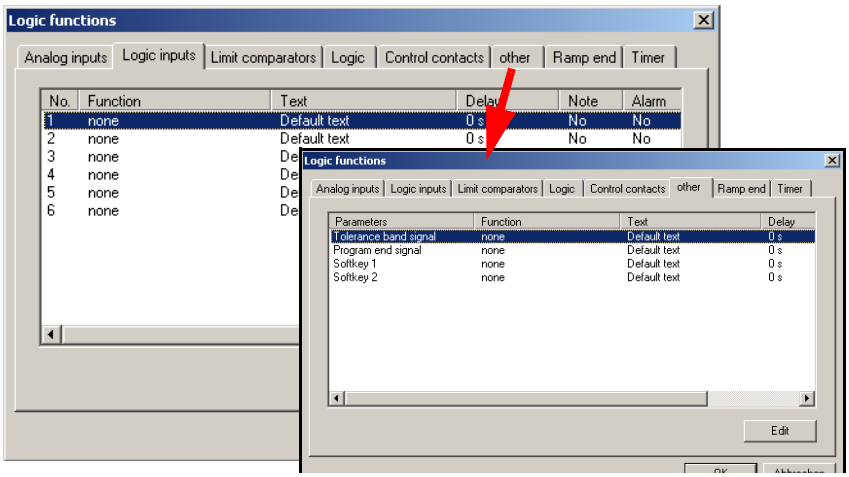
**Signal source**

The following signals can trigger logic or alarm functions:

- Analog inputs
- Logic inputs
- Limit comparators
- Logic
- Control contacts
- Others (program end signal, tolerance band signal)
- Ramp end
- Timer

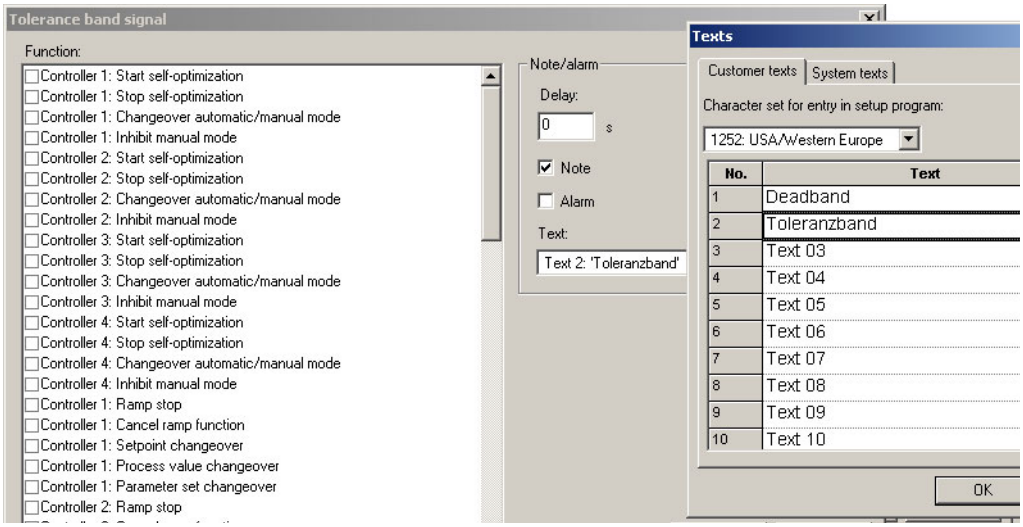
**Messages**

These can appear as text messages in the information line, as alarms that must be acknowledged, or also as message indications.




**Example**

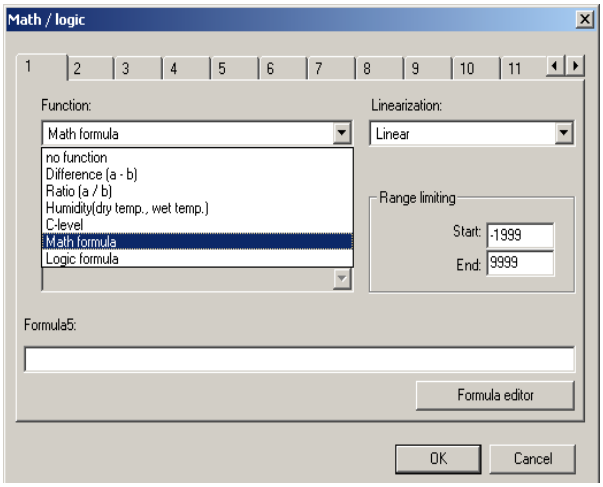
As soon as the process value for controller 1 goes outside the tolerance band, an alarm should appear in the bottom line of the screen and the program should be interrupted.



## 4.6.7 Math/logic

**Math**

Eight mathematical or logical formulae can be entered which can be assigned to various functions as required. These function must be available as extra codes in the device.



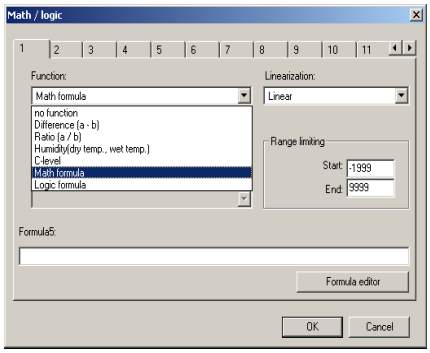

✱ Select *Math formula*

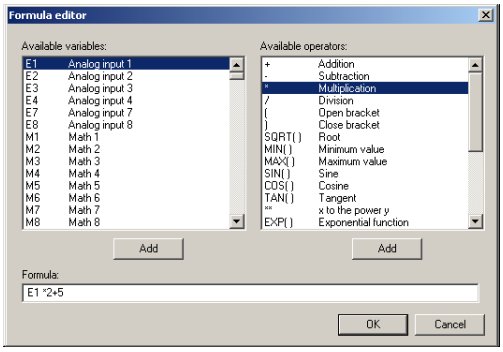
| | Selection/settings | Description |
|---|---|---|
| **Function** | No function | No function |
| | Difference (a - b)<br>Ratio (a/b)<br>Humidity<br>Formula<br>Math formula<br>Logic combination (formula) | ⇨ see description of difference, ratio and humidity in Operating Manual 70.3590 |
| **Variable a**<br>**Variable b** | Switched off | Description in Operating Manual 70.3590 |
| | Variables for the analog and logic selector | (only relevant for difference, ratio and humidity) |
| | **Range limitation** | |
| **Start** | **-1999** to +9999 | If the calculated result is outside the range limits, an alarm message is generated. |
| **End** | -1999 to **+9999** | |
| **Linearization** | ⇨ Chapter 4.6.1 “Analog inputs” | The mathematical calculation can be combined with a customer-specific linearization table. |

■ / bold = factory setting

**Math calculation signs and functions**

✱ Click on *Formula editor*



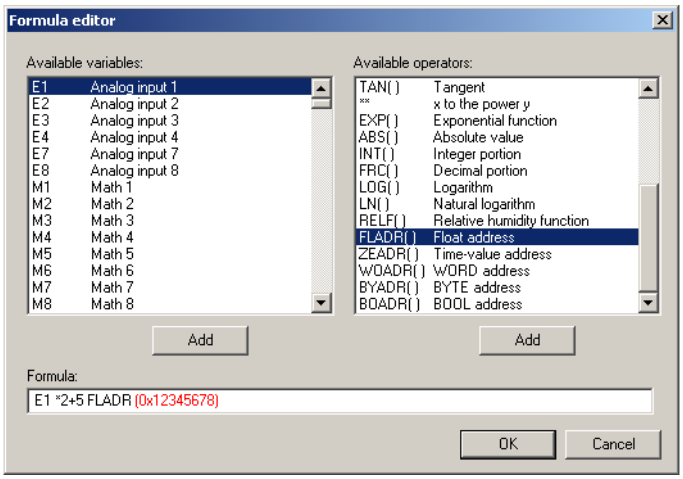
**Formula editor**

- The string of signs in the formula consists of ASCII characters, and can have a maximum length of 70 characters.
- The formula can only be entered in the setup program.
- A formula can be freely entered or added according to normal mathematical rules.
- Spaces can be inserted at will into the formula character string. But spaces are not permitted within function labels, variable names or constants.

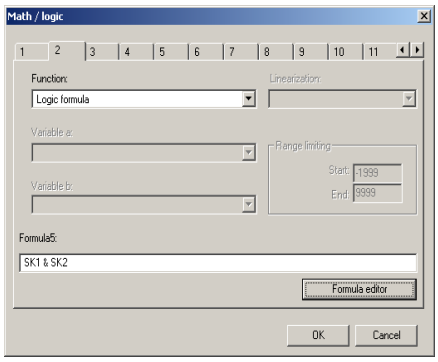
**Addressed variables**

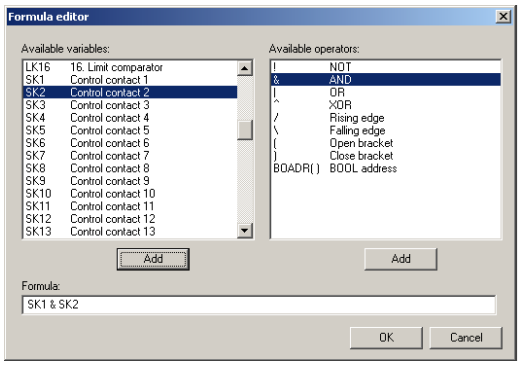
* Addresses are entered in the math module with a maximum of 10 characters:
  2 characters for the hex-ID and 8 characters for the address.

Leading zeros must also be entered.
Examples: 0x12345678 or 0x00001000



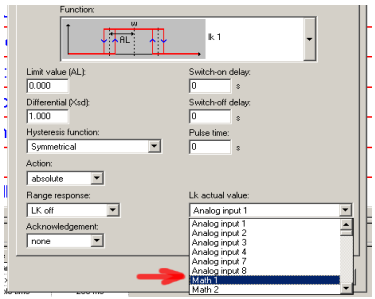

**Logic 1 — 16**

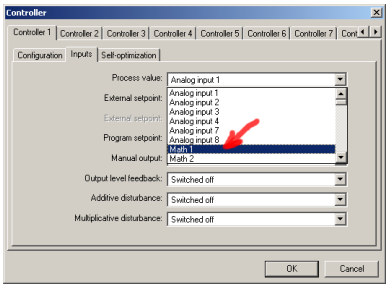



**Output example**

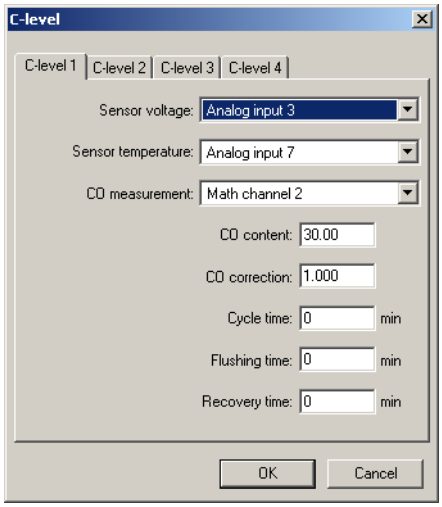
For **analog signals**, the result of the calculation can, for example, be applied to a controller input or a limit comparator input.
Results of logic combinations must also be applied to **logic outputs** such as relay outputs.




## 4.6.8 C-level

⇨ This function is described in Operating Manual 70.3590.0



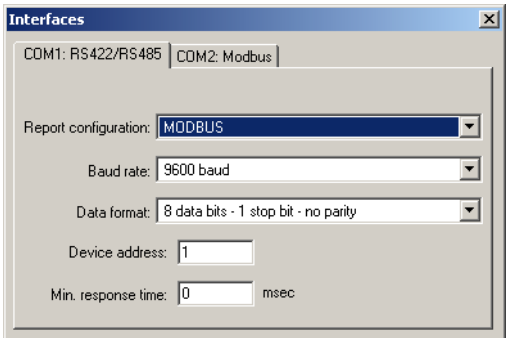

## 4.6.9 Interfaces

The interface parameters for the COM1 and COM2 ports in the IMAGO 500 are set here.

If these settings are altered and transferred to the device, then the connection data for the PC and the device are now different, and any existing connection will be broken.
The connection data must be set up again, so that they match exactly.

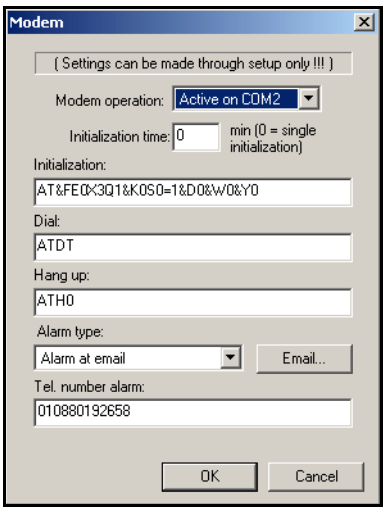
⇨ Chapter 4.2 “Interfaces on the IMAGO 500”

**COM1**




## 4.6.10 Modem

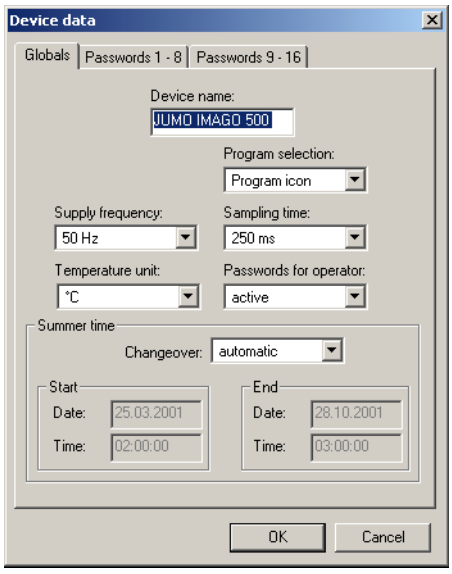
⇨ Explained in Chapter 6.6 “Settings in the setup program”




## 4.6.11 Device data

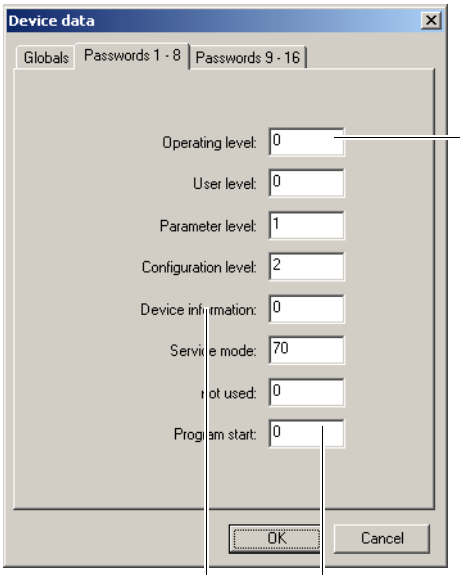
The various settings for the basic operation of the device are defined here.

⇨ This function is described in Operating Manual 70.3590.0




**Passwords 1 — 8**

Entering a “0” means that this password will not be requested.

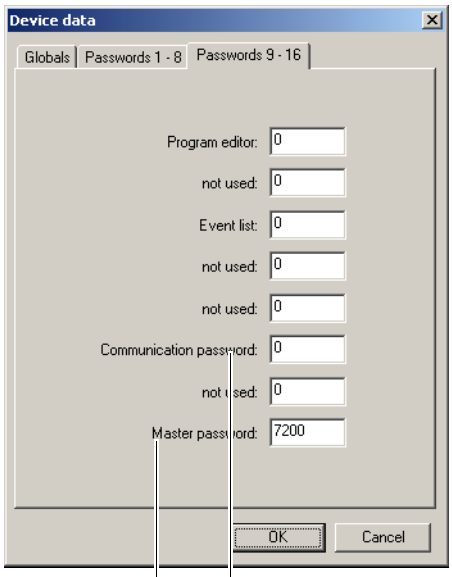



**Level passwords**
These can be used to selectively inhibit the levels

**Program start**
This password is requested at the start of the program.

**Device information**
This password will be requested if the *Device info* window is called up on the device.

**Passwords 9 — 16**



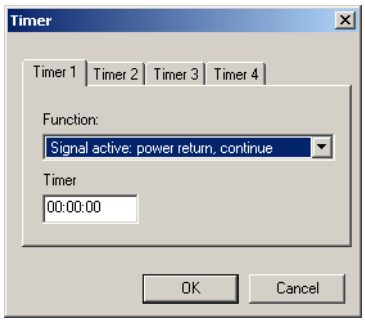

**Communication password**

This password must match in the device and in the connected PC program.
Once it has been transferred to the device, it will irrevocably inhibit access to all the serial interfaces!
**If the password is lost**, communication can only be restored through the factory settings. This would overwrite all the settings!

**Master password**
If the master password is entered in any of the password dialogs, then no more passwords will be requested until the device is restarted, e.g. after a power failure.
It has a higher priority than the level passwords, but does not de-activate the communication password!

## 4.6.12 Timer

⇨ This function is described in Operating Manual 70.3590



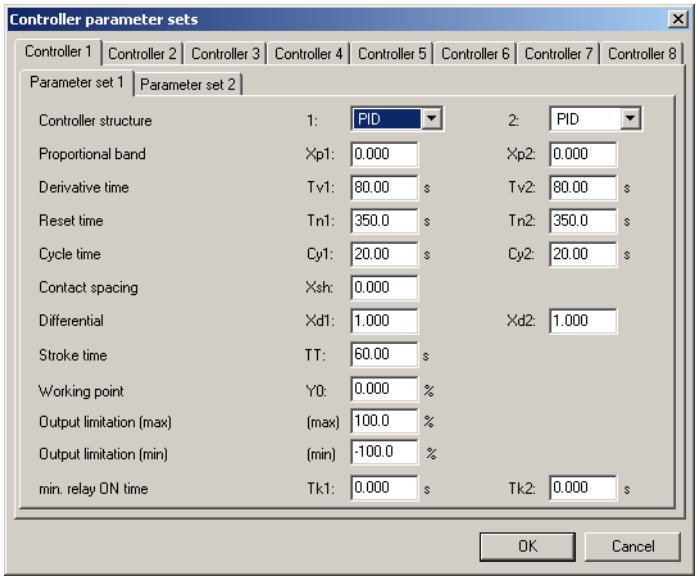
# 4 Setup Program

## 4.7 Parameterization

### 4.7.1 Controller parameters

2 parameter sets are provided for each controller channel, and these can be allocated segment by segment during programming.

⇨ This function is described in Operating Manual 70.3590.0



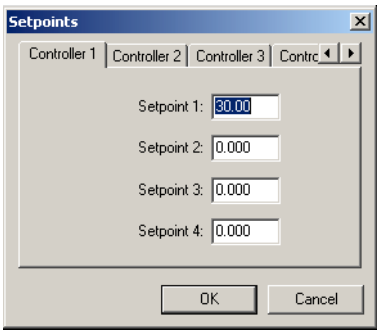

## 4.8 Operating level

### 4.8.1 Setpoints

Here you can enter setpoints for the fixed-setpoint controllers.

The changeover is made by 2 logic signals from the logic selector.

⇨ Chapter 4.6.6 “Logic functions”



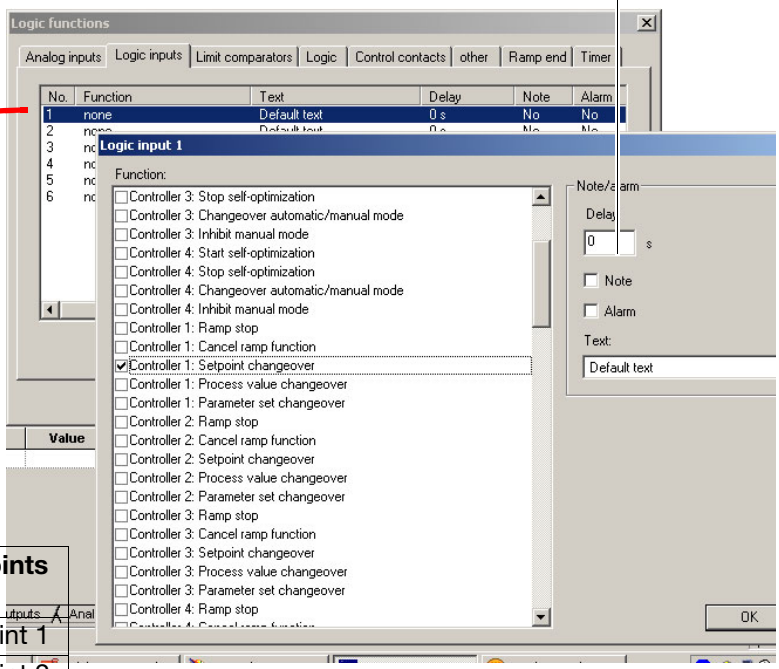

**Setpoint changeover**

The first two activated logic inputs change over the setpoints. If a 3rd logic signal is activated it will have no effect.

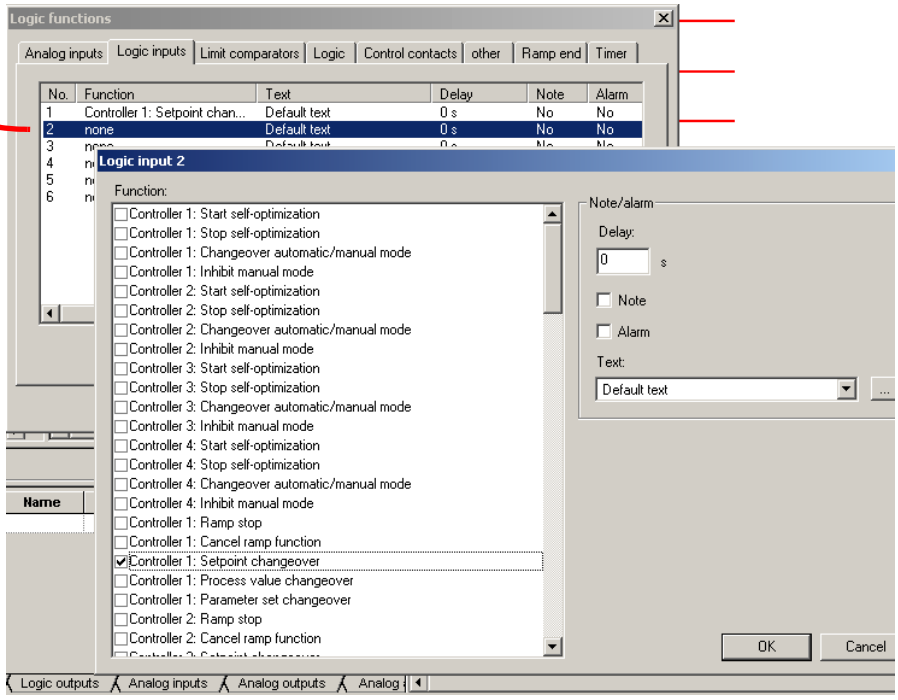
**Example**

The logic inputs 1 and 2 are to change over the setpoints for controller 1.

**Delay**
This delay refers to the text that is shown, not the functions.




| Logic level Logic input 1 | Logic level Logic input 2 | Setpoints |
|---|---|---|
| 0 | 0 | Setpoint 1 |
| 1 | 0 | Setpoint 2 |
| 0 | 1 | Setpoint 3 |
| 1 | 1 | Setpoint 4 |



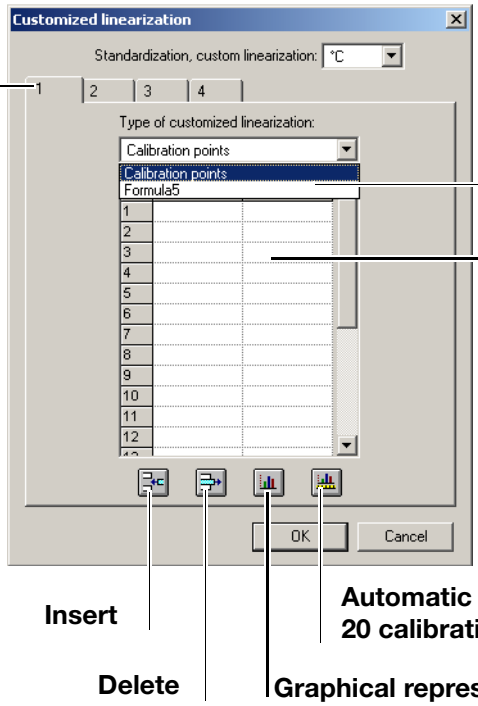
# 4 Setup Program

## 4.9 Settings through setup only

### 4.9.1 Customized linearization through calibration points

Using this function, a linearization can be entered as 20 value pairs (calibration points) or as math formulae up to the 5th order.

**Customized linearizations 1 to 4**
These are available as linearization in the *Analog inputs* menu.
⇨ Chapter 4.6.1 “Analog inputs”




**Formulae up to 5th order**

**Window for entering calibration points**

**Insert**

**Delete**

**Automatic distribution over 20 calibration points**

**Graphical representation**

**Dimensional unit**

When entering calibration points, the X value corresponds to the physical variable, such as Ohms, V or mA.

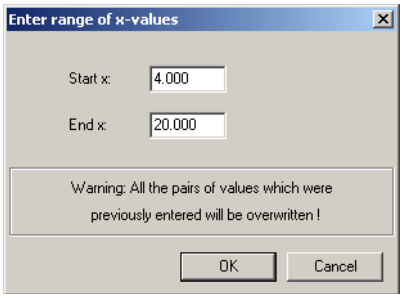
**Automatic calibration point distribution**

The automatic function distributes the 18 intermediate X values automatically in the table

**Example**

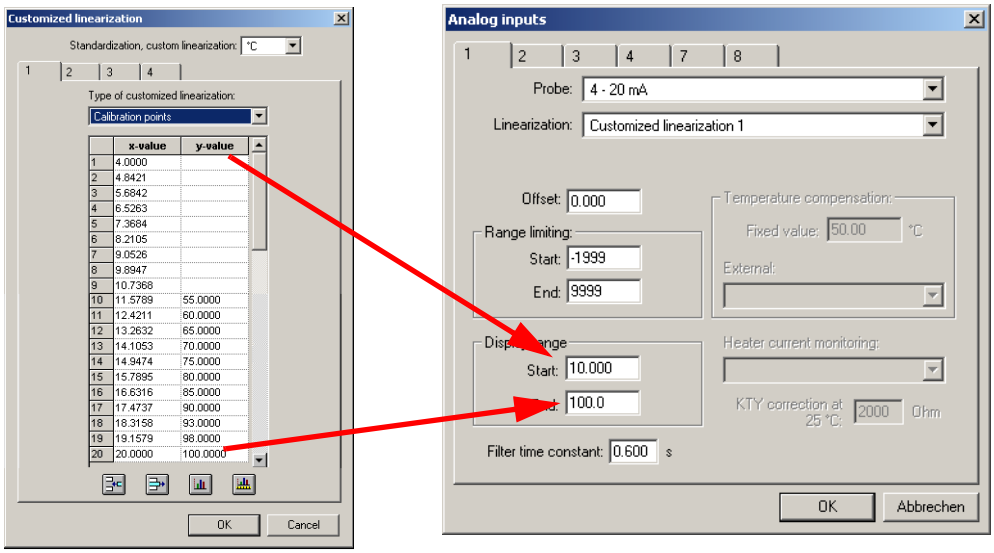
Standard signal 4 — 20mA

* Click on the icon




* Enter the start and end values
* Click on *OK*
  The X column is automatically filled with values.

✱ The corresponding Y values are entered in the column.

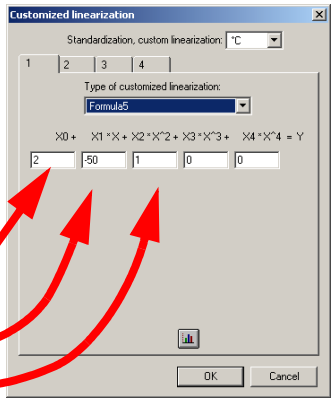



✱ Set the start of display range: 10 and the end of display range: 100 for the analog inputs (first and last Y values in the table)

## 4.9.2 Customized linearization through a math formula

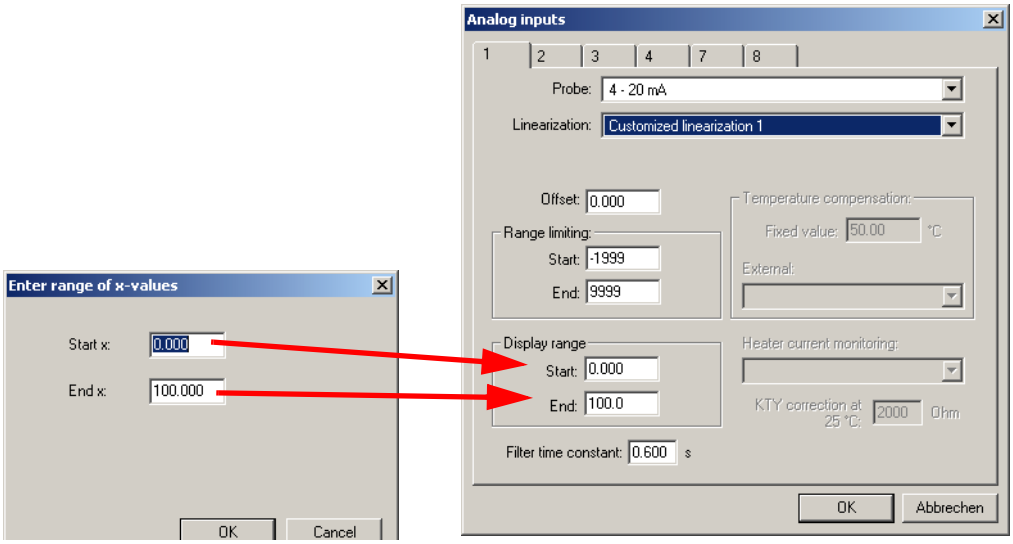
In this case, an established math formula determines the linearization values, as used, for instance, for measuring a volume through the pressure, when the tank is not cylindrical but spherically shaped.

**Formula:** $y = x^2-50x+2$



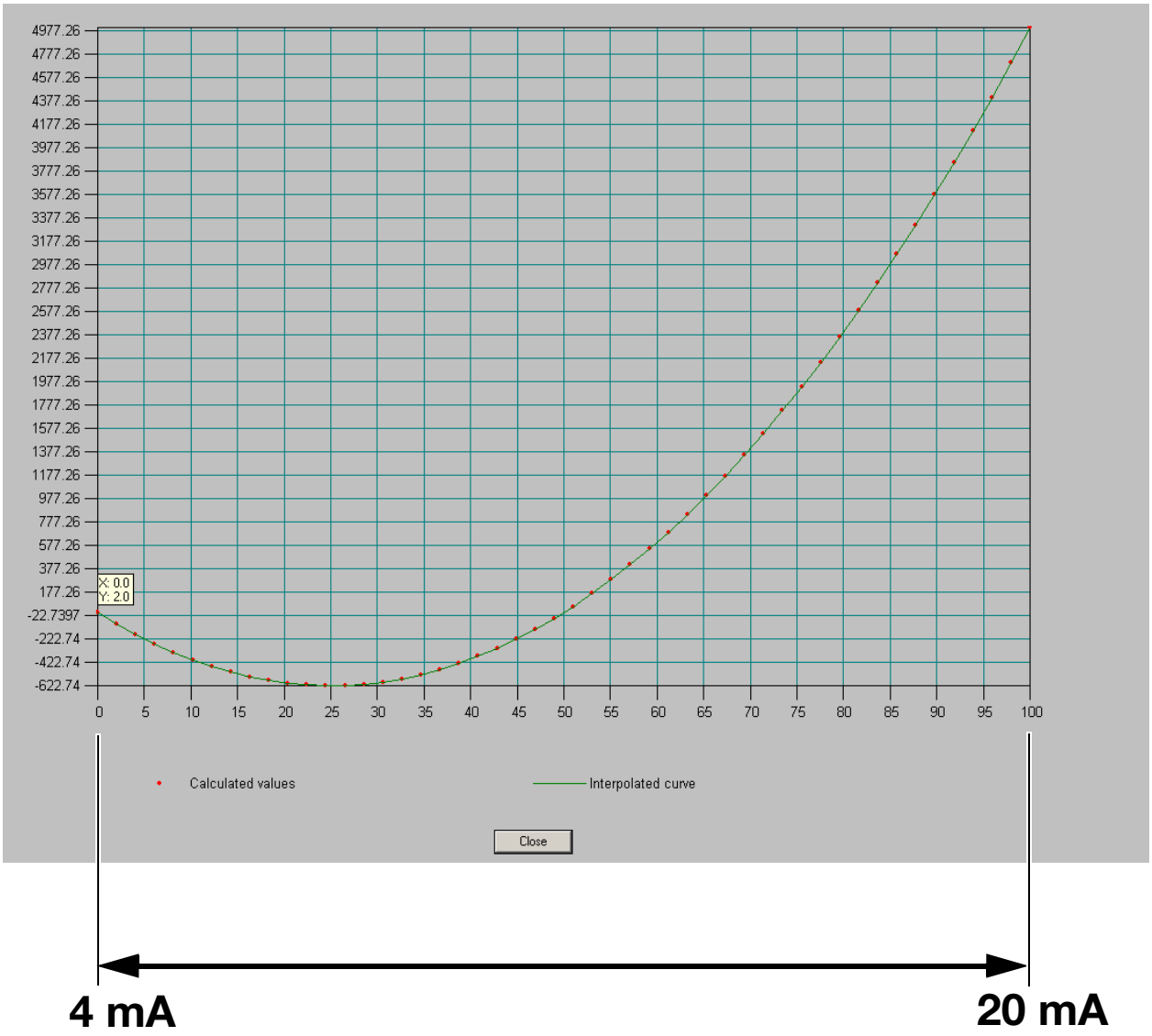

✱ Enter the coefficients for the formula

✱ Confirm with *OK*




- Enter the start value for X, as was done for the start of the display range.
- Enter the end value for X, as was done for the end of the display range.
- Confirm with *OK*

A preview of the linearization is displayed across the entire screen.

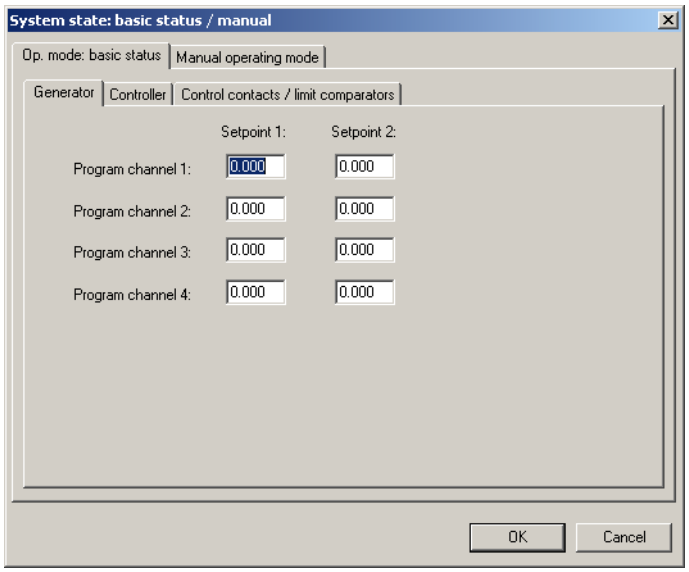



The X signal is thus normalized to the analog input 1, over the range 0 — 100.

## 4.9.3 System state, basic status/manual

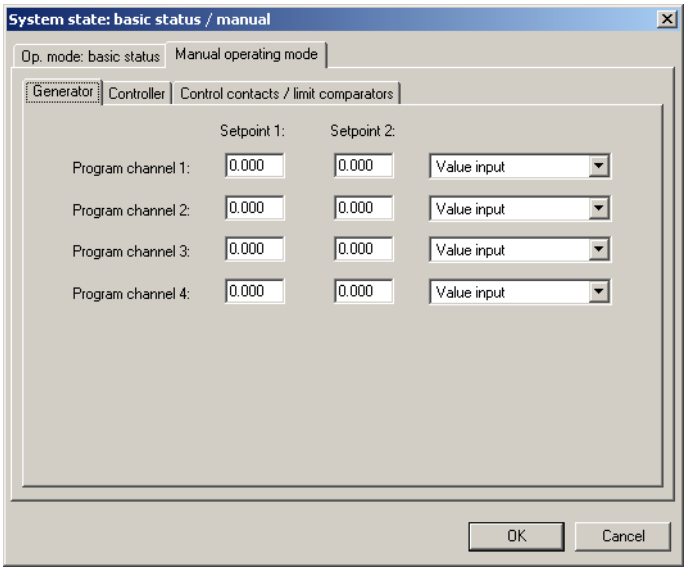
**Basic status**

Here you can define how the generators, controllers, limit comparators and control contacts for the (maximum) 8 program channels should function in the basic status.




**Manual mode**

Here you can define how the generators, controllers, limit comparators and control contacts for the (maximum) 8 program channels should function in the basic status.



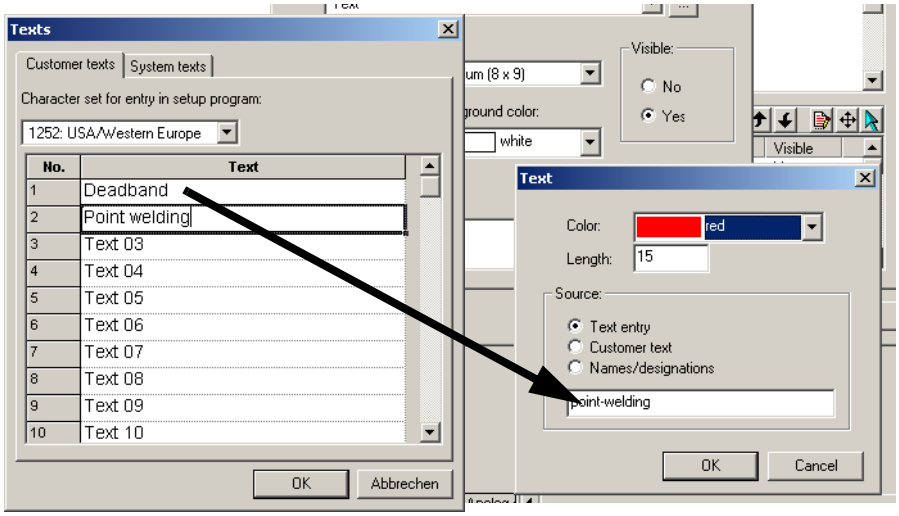
## 4.9.4 Texts

**Customer texts**

Up to 100 texts can be defined here.

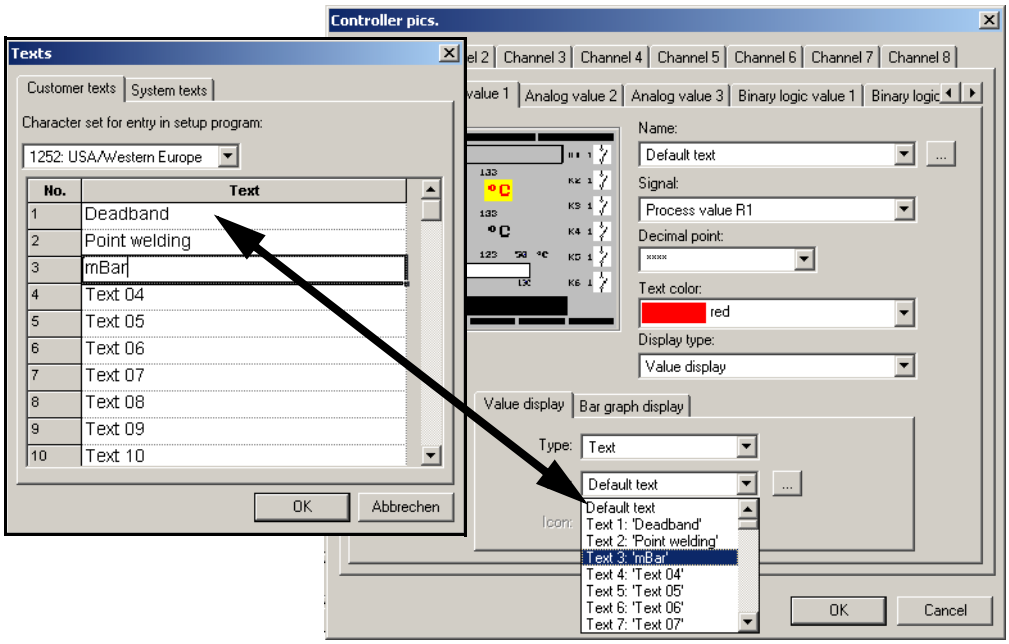
These texts can provide assistance for events or variable values that require special explanation.

They are mainly required in the layout of customized diagrams.




**Changing the unit in the controller diagram**

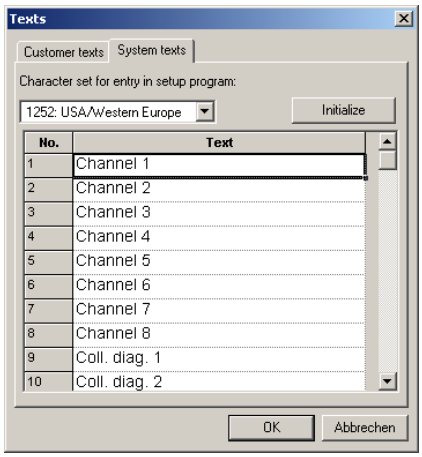
* Enter the desired unit as text
* For instance, set Text 01 in the controller diagram, instead of default text



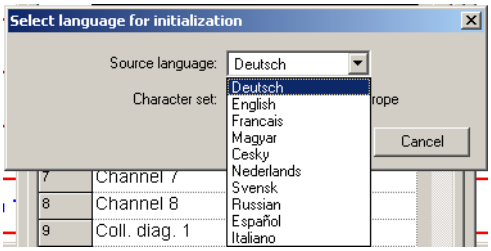
**System texts**

Here you can modify system texts that are used for operator guidance on screen, to suit your own requirements.

Initialization means that the text boxes are preset to show texts in a specific language that you select.




✱ Click on *Initialization*



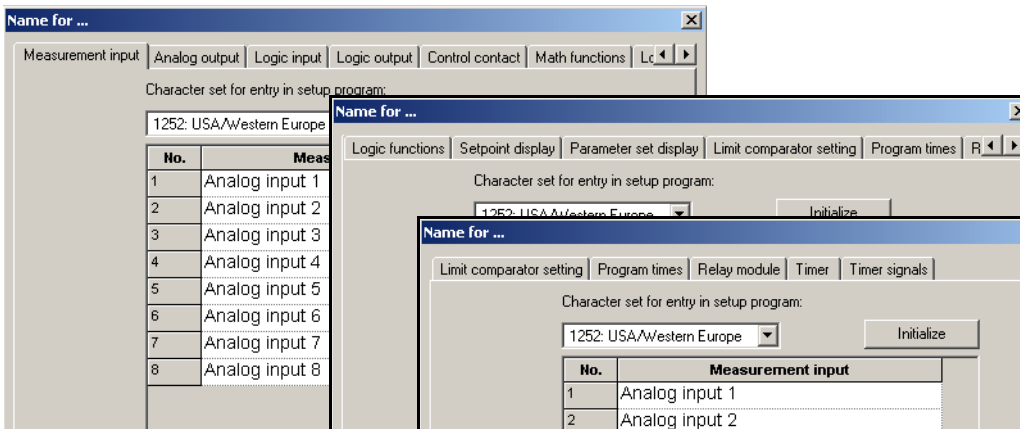

✱ Select the language and character set

✱ Confirm with OK

### 4.9.5 Names

Here you can define meaningful designations for the measurement input, analog output, logic input, logic output, control contact, math function, setpoint display, parameter set display, limit comparator setting and program times.

These names affect the on-screen appearance of the device. Here you can alter the preset designations to suit your requirements. Names can be up to 16 characters long.

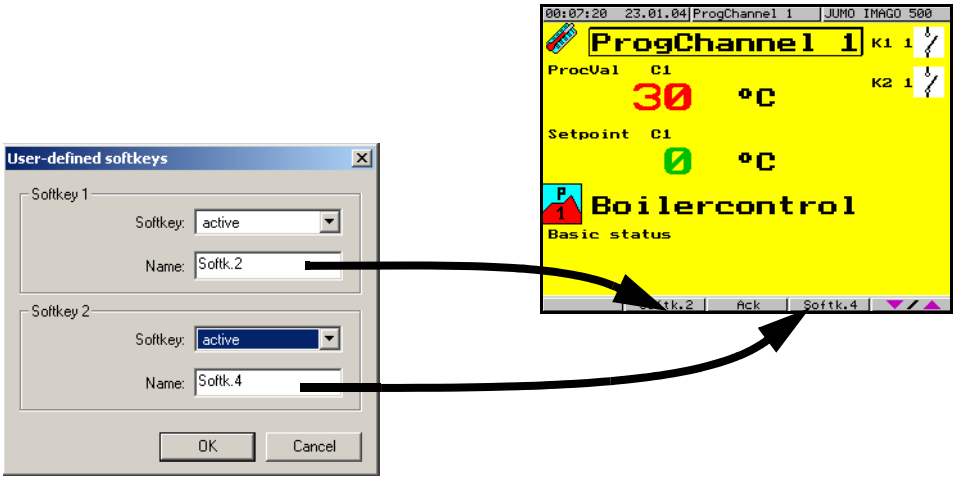



### 4.9.6 Softkeys

2 function keys on the device can also be activated.

With a program controller, this has the effect that the softkeys for *Manual* and *Next segment* are no longer available!

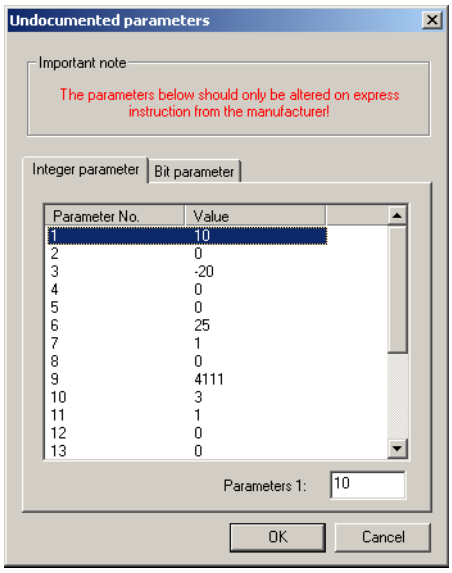
The softkey text must not be longer than 7 characters




The assignment of the key functions is made in Chapter 4.6.6 “Logic functions”.

## 4.9.7 Undocumented parameters

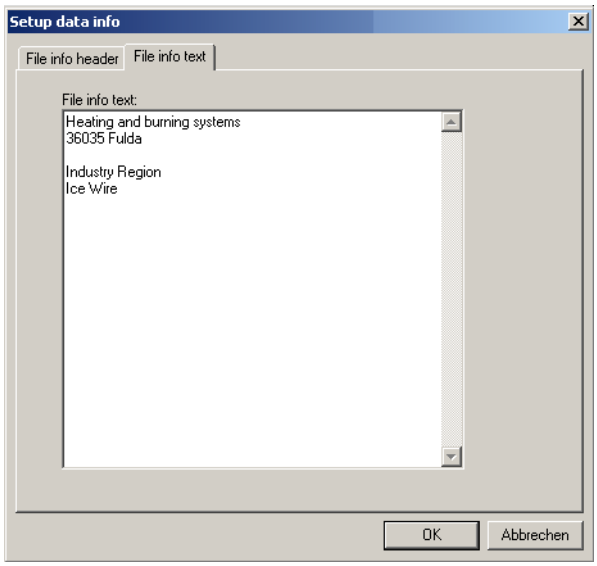
These parameters are not used at present, and may only be altered on express instruction from the manufacturer!



## 4.10 File info text

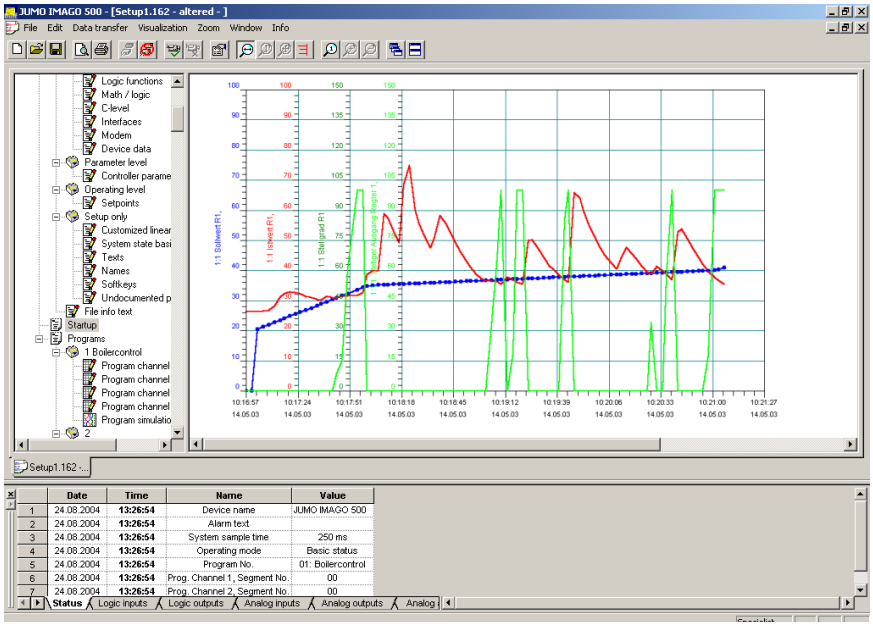
Various lines of documentary information are entered here, which will appear when the setup data are printed out.

It is also possible to enter a text, for instance, that provides descriptive detail about the system. This would subsequently be of assistance in finding the various setup files.



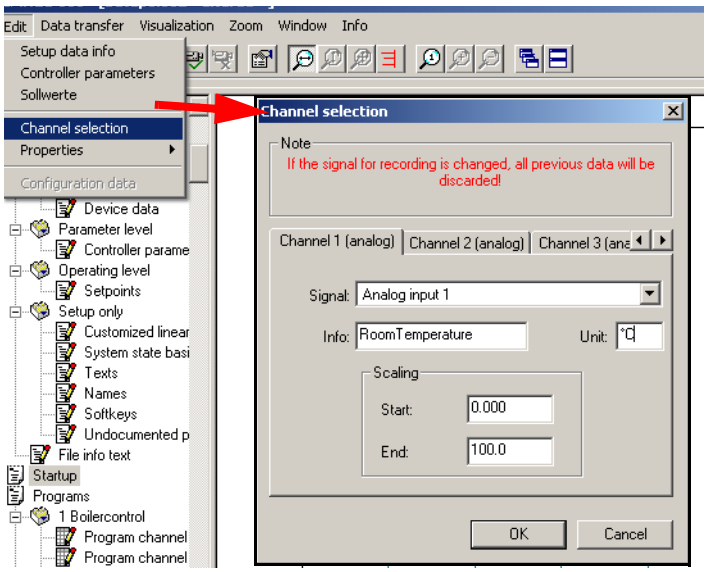

## 4.11 Startup program

After simply plugging in the setup interface cable between the PC (or laptop) and the IMAGO 500, the user can access all the analog and logic values in the device. Up to 8 analog values (1 — 8) and 4 logic values (9 — 12) can be displayed simultaneously in the value/time diagram, and in different colors. Functions such as zoom, blanking out of individual traces, print out etc. are also provided.



**Set the required variables**

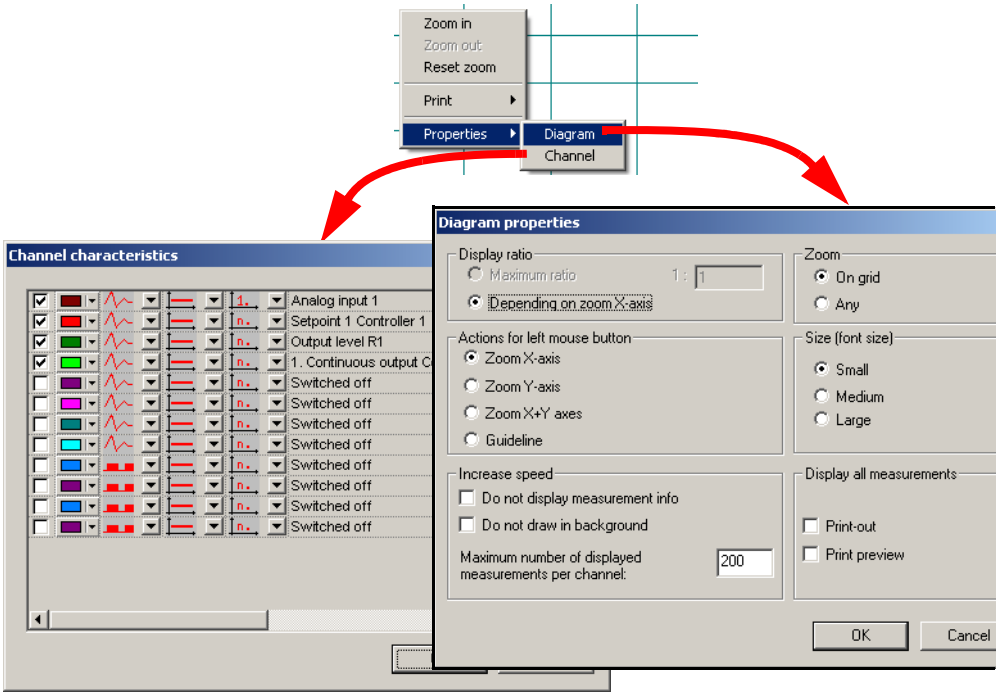
* Click on *Startup*
* Click on *Edit* ➔ *Channel selection* in the menu bar
* Click on the required variable in the selection
  (Analog variables are 1 — 8, logic variables are 9 — 12)




The texts for *Info* and *Unit* appear as descriptive text along the Y axis.

**Properties of diagram and channel**

* Make a right-click with the mouse inside the dialog window




In this window, the presentation properties are set for color, curve shape and scales of the X and Y axes.

* Click on *Visualization* ➔ *Start* or

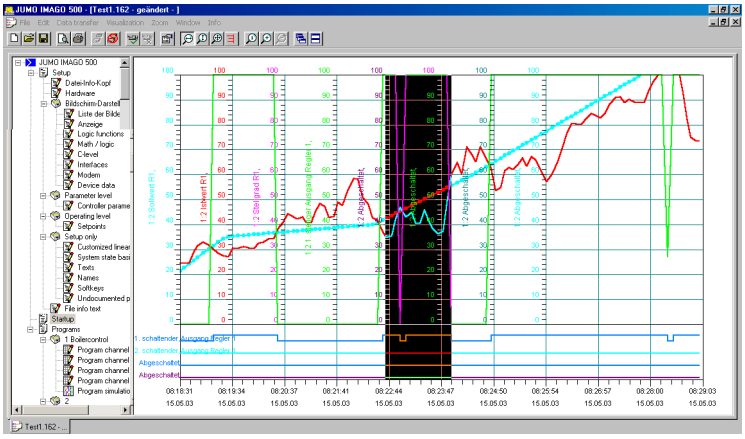
The selected data will continue to be recorded until

*Visualization* ➔ *End* or is clicked.

**Zoom horizontal / vertical**

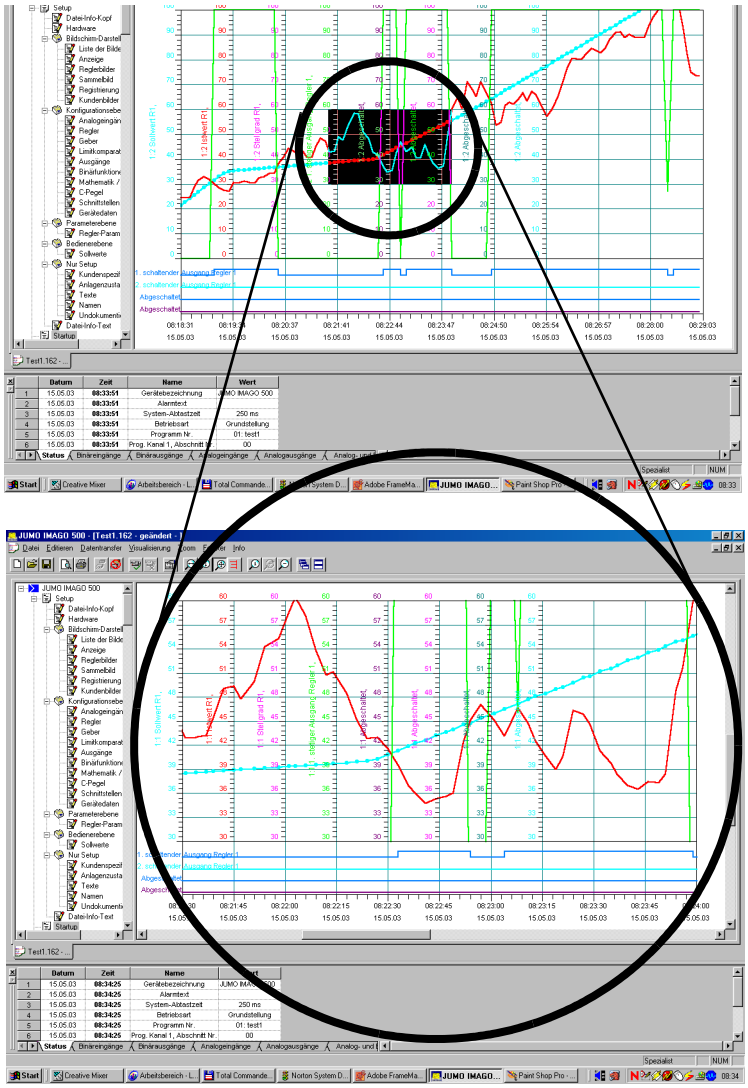
✱ Use the mouse to mark a range in the recorded diagram

The selected range of the X or Y axis will be enlarged.



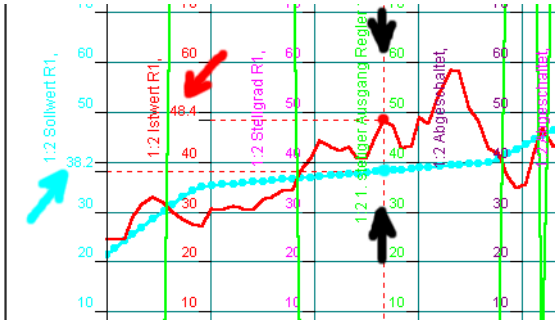
**Zoom Section**

The chosen section will automatically be enlarged to fill the entire screen.

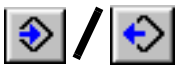


**Measurement cursor**

✱ Click on the position in the diagram for which the values should be shown.




## 4.12 Transfer setup data to device



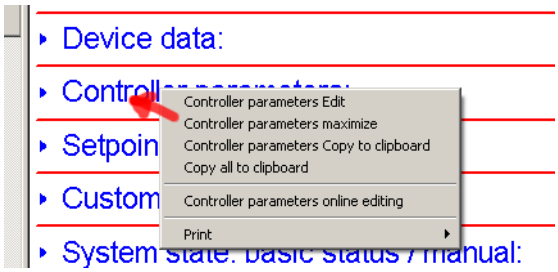
Use these buttons in the menu bar to transfer all the setup data (settings) to or from the device. The time required for transmission time will depend on which programs and data are to be transferred.

This procedure is especially suitable for configuring a new device.

### 4.12.1 Online edit

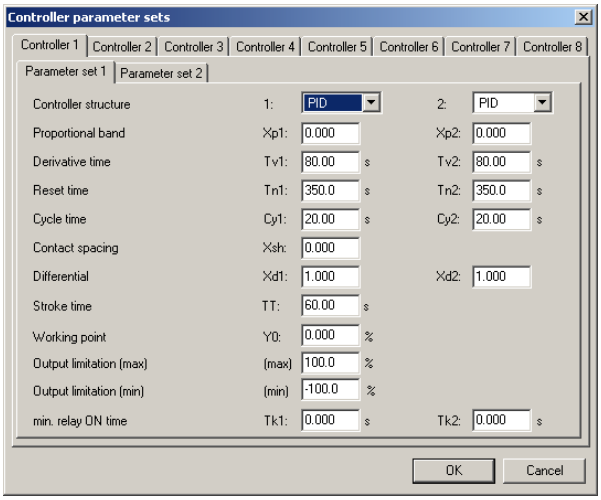
If it is only necessary to adjust individual parameters, then they can be read out selectively from the device, altered, and transferred straight back to the device.
Online editing is very fast, because all the unaltered parameters do not have to be transferred, and it is started directly from the program user interface.

* For example, place the cursor on the collective term *Controller parameters*.
* Make a right-click and carry out the online edit.




A connection will automatically be made to the device. The data will be read out from the device and presented in the familiar dialog box.

⇨ Chapter 4.7.1 “Controller parameters”




* Alter the required data in the dialog box
* Confirm with OK
  The data will be written back to the device.

In the previously saved file, alterations have only taken place in the *Controller parameters* dialog. If you want to keep the changes, do not forget to carry out a *Save data*!

# 4 Setup Program

## 5.1 General

The program editor is used to assemble program segments with various setpoint values together in a table to form executable program profiles for the controller channels. Each segment can have a parameter set assigned, and repeated cycles can be defined.

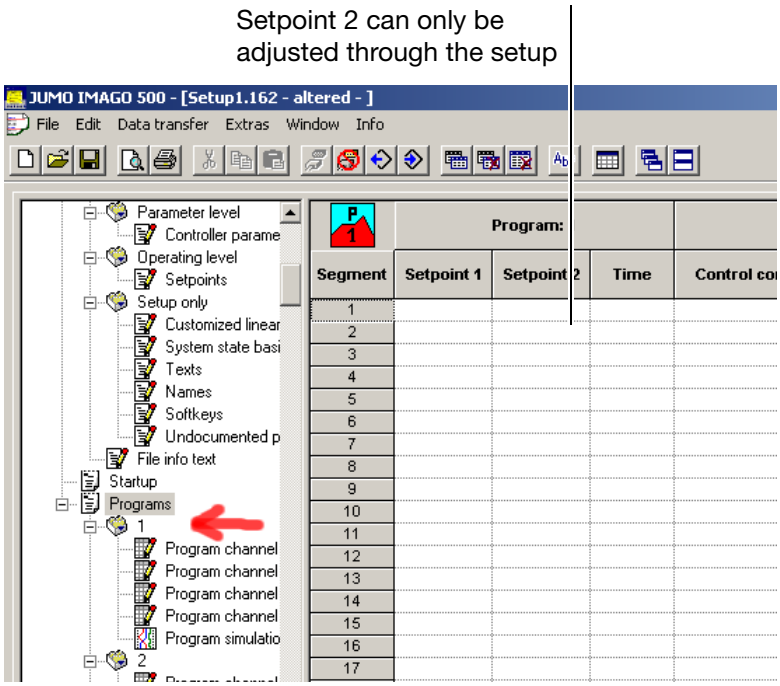
Programs that have been entered are saved in a file, together with the setup data.

**Program memory**

A maximum of 1000 segments can be entered, in up to 50 different programs.

## 5.2 Program call

✱ Click on the program number (see arrow in the picture below)



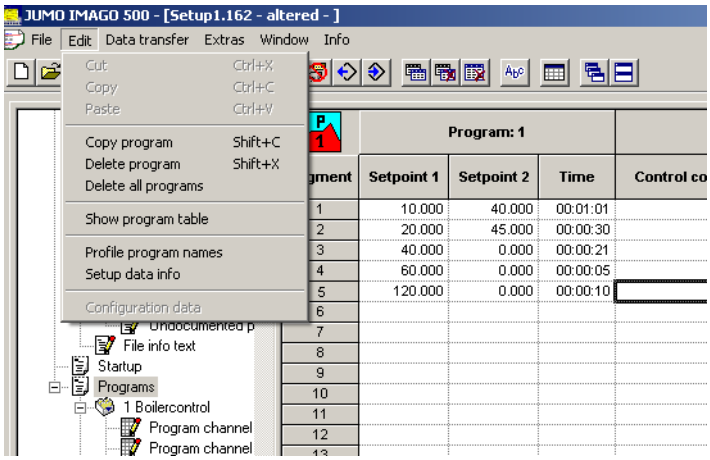

A table appears, for the entry of setpoint curves (profiles).

### 5.2.1 Enter program name and select program icon

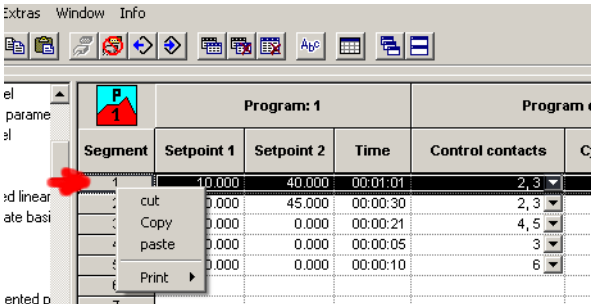
✱ Run *Edit* ➔ *Program name*
If no program name is entered, then just the program number will be shown.

# 5 Program Editor

## 5.3 Program entry




- Click on the required program channel
- The *Edit* function can be used to copy or delete programs, or to delete all programs




- A right-click on the segments makes the editing function visible for the segments

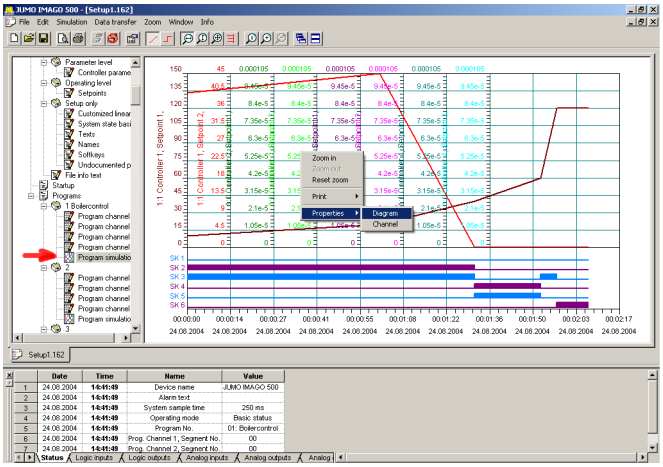
### 5.3.1 Enter setpoints, times, repeat cycles, tolerance band, parameter set, control contacts

Here you set up the segment duration as well as the setpoints.

- Confirm all the values that have been entered by presssing *Enter* (return key).
- Keep on entering the subsequent segments, until the program sequence has been completely programmed.
- Run *File* ➔ *Save*

## 5.4 Program simulation

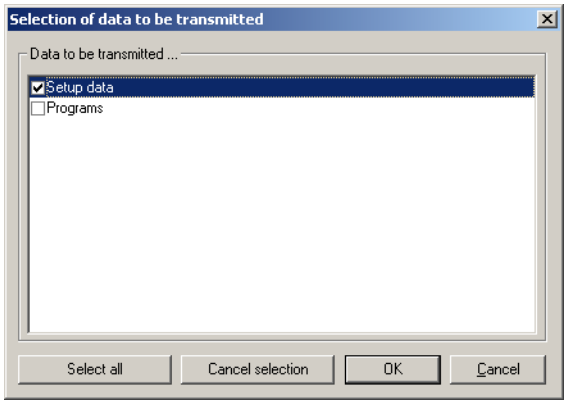
The setpoint curves (profiles) for program channels 1 — 4 can be graphically presented as a simulation.



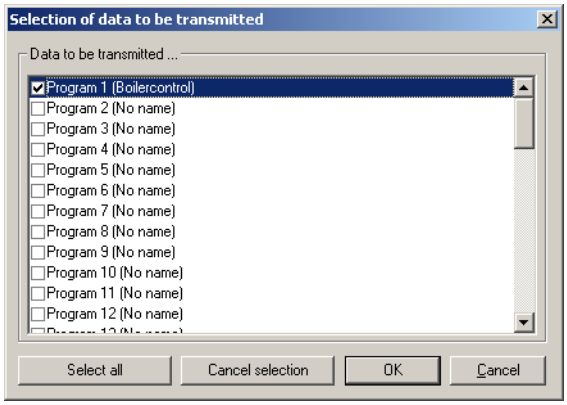
✱ A right-click on the segments makes the editing function visible for the segments. You can set up the display parameters and colors.

## 5.5 Transfer programs to device

It is possible to select individual progams and transfer them to the device. You can also choose whether the setup program should also be transferred to the device.




✱ Mark the programs
In the selection, one of the 50 programs has been marked



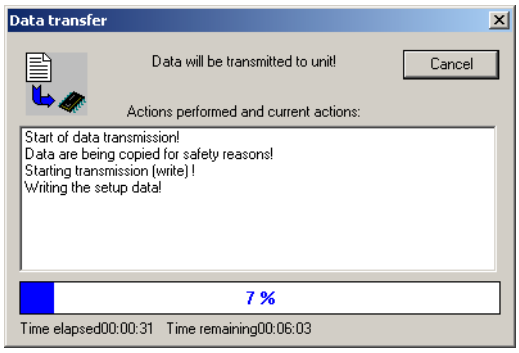

**Selective transfer**

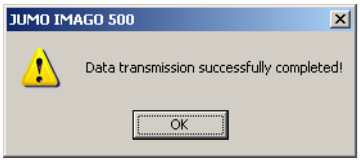
If you do not want to transfer all 50 programs, for instance in the event of a few program changes, then first use *Cancel selection* to remove all the tick marks.

**Caution!**

If an “empty” program (i.e. one without any segments) is transferred to the device, the program already in the device will be deleted.

* Only click on the programs that really need to be transferred.
* Use *OK* to start program transfer
  A window will now appear for the status of the data transfer.



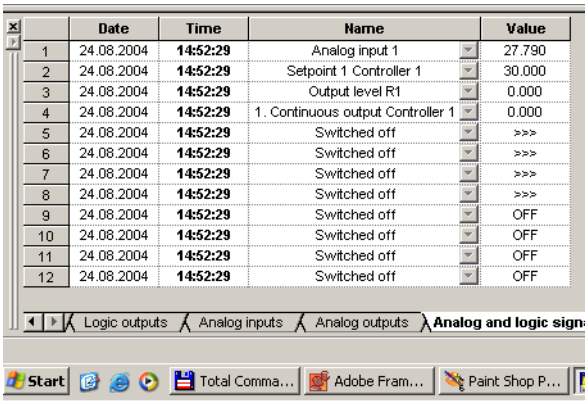

If all the data have been transferrred correctly, a message will appear.

## 6.1 General

**Window for Teleservice**

The Teleservice window is placed at the bottom of the screen and consists of several index cards (windows) that indicate the present state of a connected device:

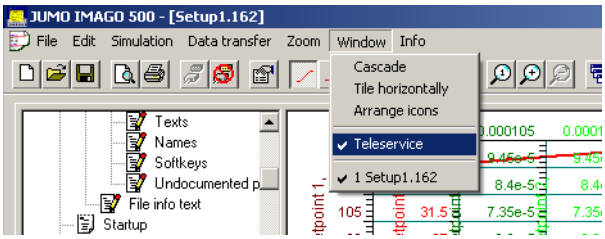
- Status window for system messages, such as error messages
- Logic level of the logic inputs
- Status of relay outputs
- Values of analog inputs and outputs
- Analog and logic signals
  8 analog values and 4 logic values can be freely set up




☞ If the setup software has been installed, the selector for the signal setting remains greyed out. The signals are shown, but not selectable.

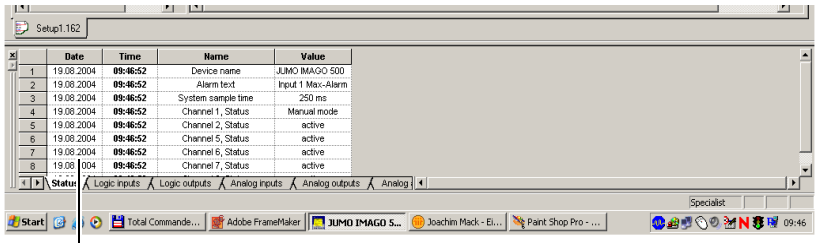
**Call**

Click on *Window* ➔ *Teleservice*
A tick in front of the submenu title indicates that the window is active.




The display depends on the hardware build level of the device.

# 6 Teleservice




**Teleservice window**
for remote monitoring of a device

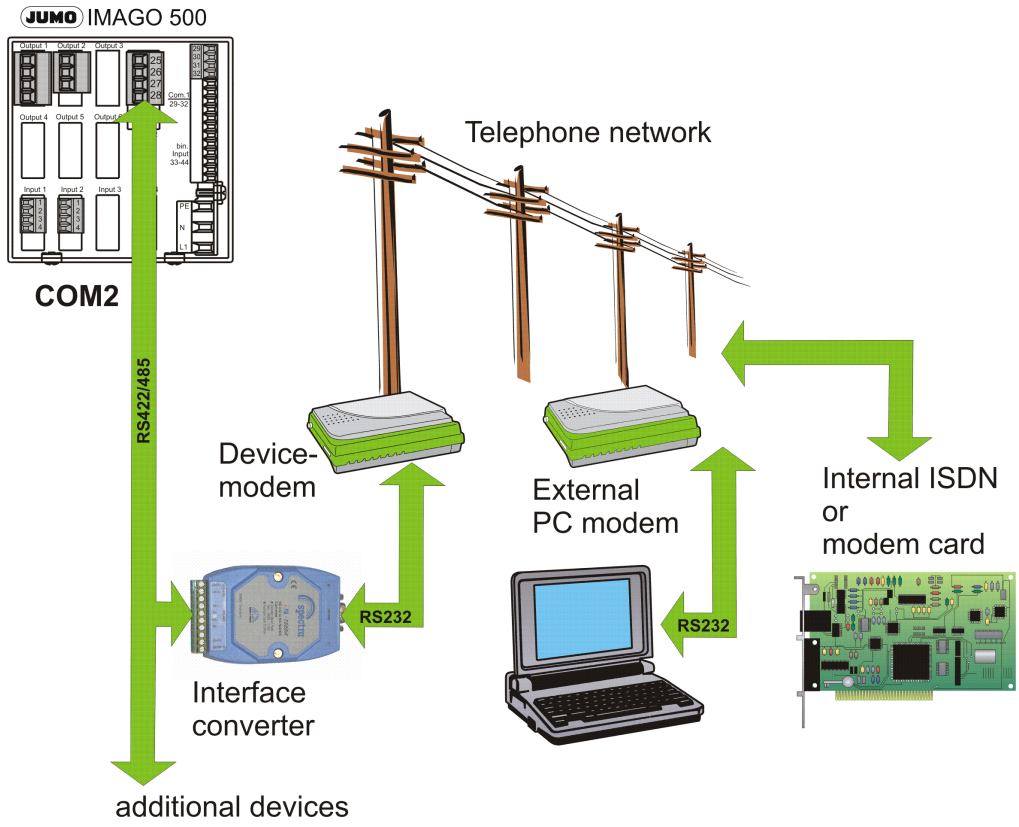
**Functions**

Data can be read out from a device that is either connected directly or via a modem. The telephone costs for the modem transmission will be charged to the end with the PC.

**Modem connections**

You will need two modems to make a modem connection between a PC or notebook and an IMAGO 500. In the following chapter these are always described as the **Device modem** (attached to the IMAGO 500) and the **PC modem** (attached to the PC or notebook).

The distinction between the device modem and the PC modem is very important, since the two modems have to be operated with different settings.



## 6.2 PC modem

It is only necessary to alter the settings for the PC modem if there are problems with the connection (in making the connection) or if a modem set up as a device modem is to be used at the PC end again. A new modem, for which a Windows driver is available, does not have to be initialized.
Basically, any modem can be used for which a Windows driver is available. The type of interface (COM, USB, PCMCIA, IR) has no effect on this decision.
A suitable cable should be included when the modem is purchased. This cable is used to connect the modem to the PC.

**Recommended brands**

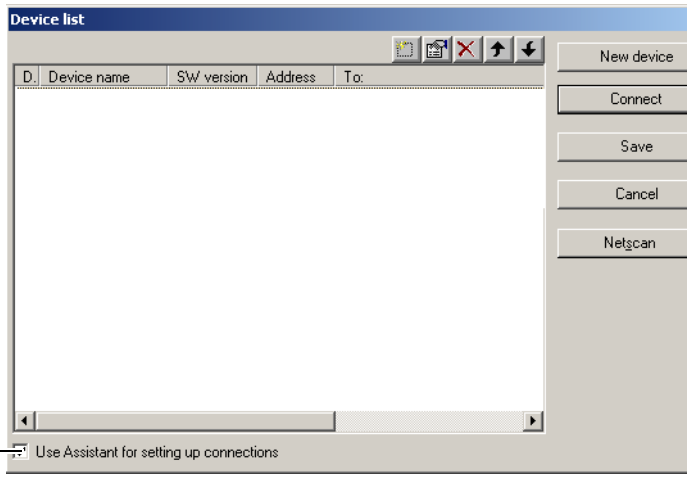
- ELSA Microlink 56k, ELSA TanGo 1000/2000 and ELSA Microlink ISDN Internet
- Allied Data Tron
- Siemens GSM Modem M20 Terminal (for mobile use; with special initialization and installation as 9600 bps standard modem)
- Siemens S25 mobile phone with IR interface (installation as 9600 bps standard modem)
- Xircom CardBus Modem 56 and Xircom RealPort M 56
- AVM Fritz!Card ISDN X.75
- AVM Fritz!Card ISDN Analog V.32bis (on a > 300 MHz PC, WinNT 4.0)
- Nokia Card Phone 2.0 (GSM modem PCMCIA)

**Requirements**

An operable modem must already be installed in the PC operating system, registered in the system control setup under Modem connections, and properly wired up to the telephone system.

**Settings**

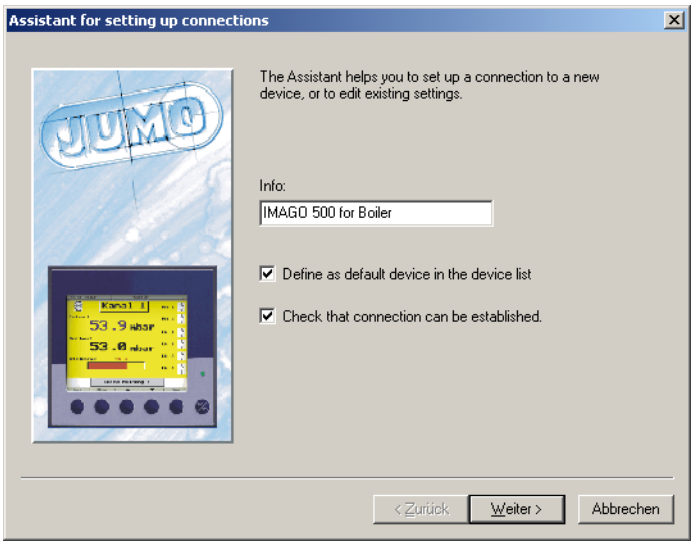
Under *Data transfer* ➔ *Make connection*
you can see the device list and enter a new connection.



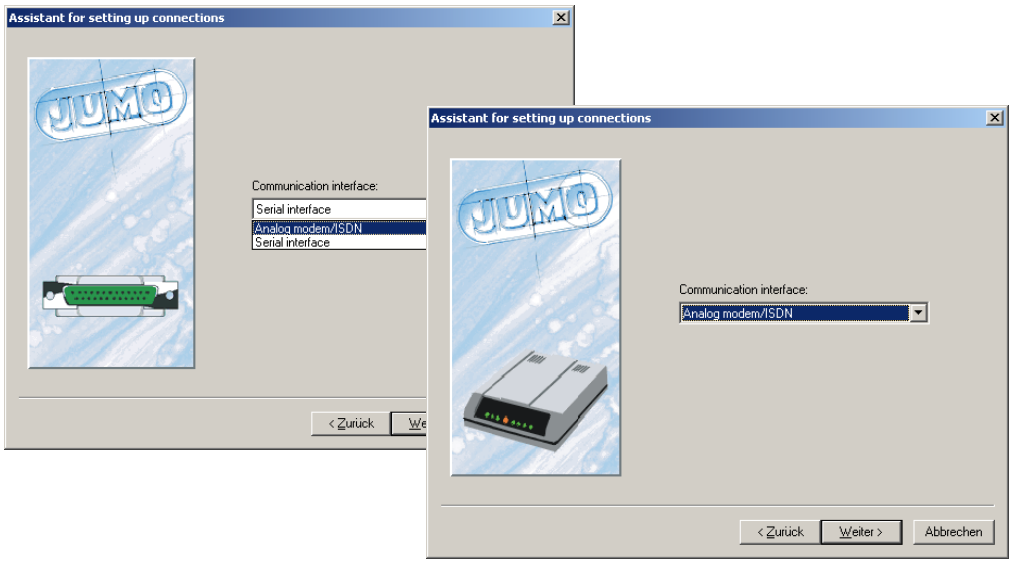

Connection Assistant is active

✱ Click on *New device* to set up a new connection

If a tick mark is set in the lower left corner, then the Connection Assistant will automatically lead you through the connection settings, step by step.

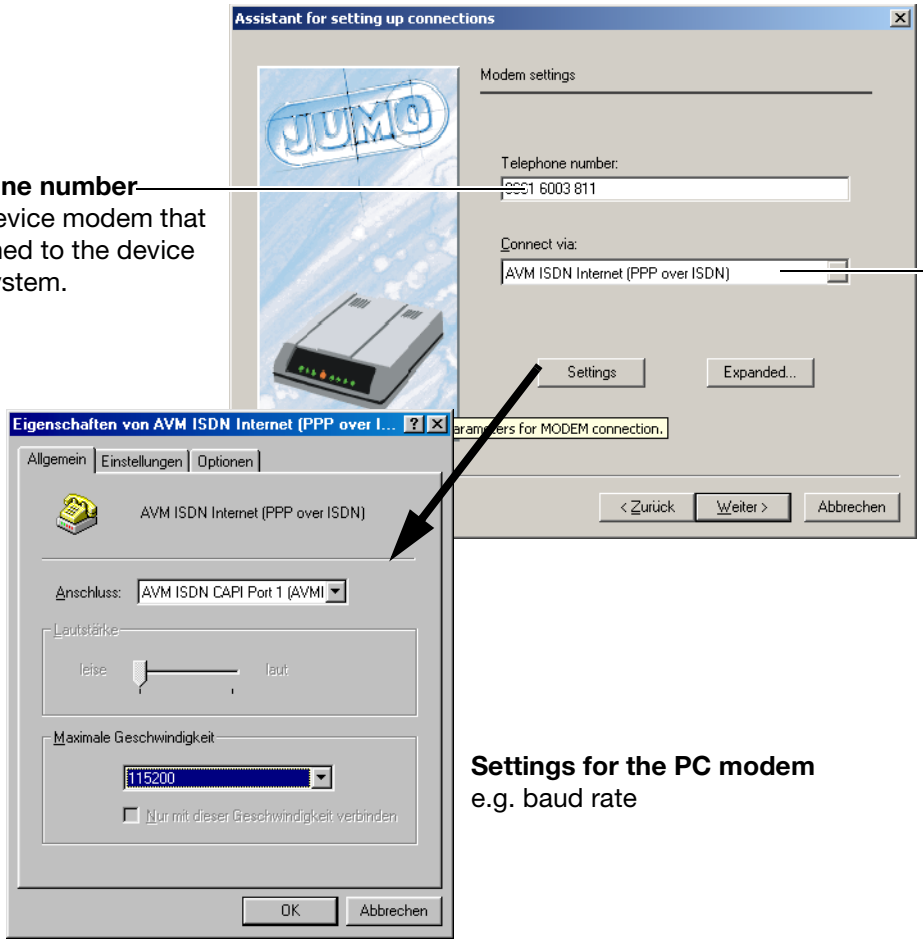



✱ Enter the connection information and click on *Continue*




✱ Set to analog or ISDN modem

✱ Click on *Continue*




**Telephone number**
of the device modem that is attached to the device in the system.

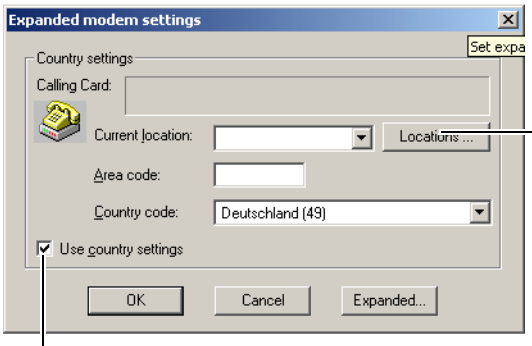
**Selection**
of all the modems that are installed under WIndows

**Settings for the PC modem**
e.g. baud rate

- Enter the call number and select the required PC modem
- Confirm with OK

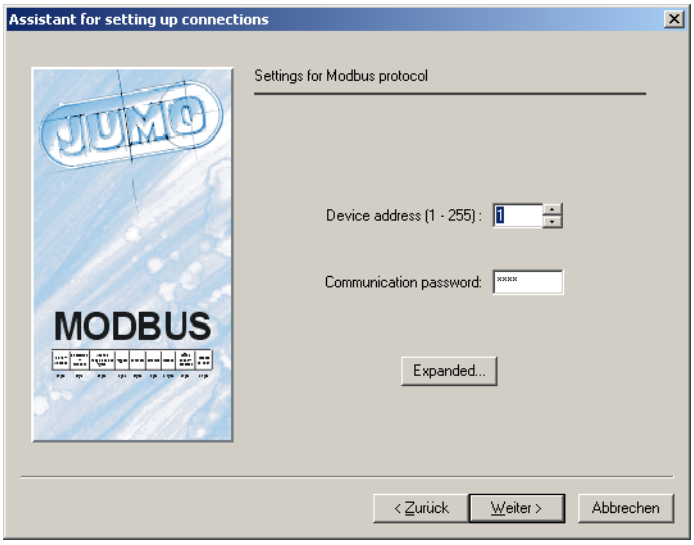
**Use country settings**

If you want to take account of the country code and the location for the telephone number (e.g. “Office” or “Home”), then there must be a tick in the box for *Use country settings*. Activating this field enables the appropriate additional switch options.



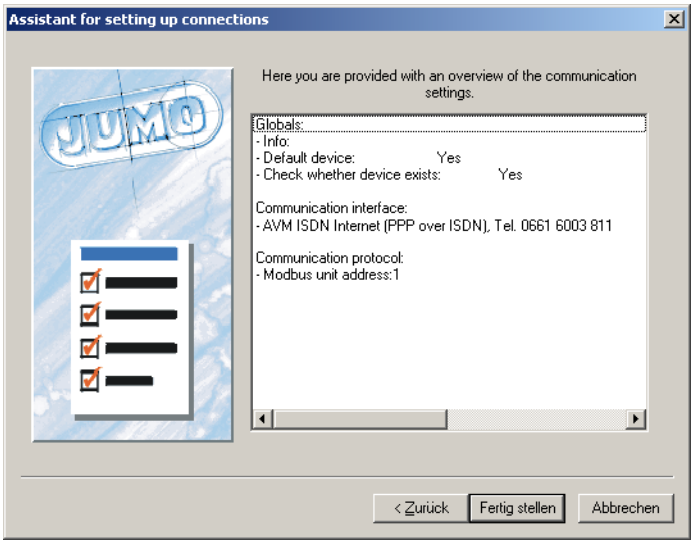

Here you can define new locations or change existing ones. The progam can then recognize whether the corresponding area codes must be dialed.

The location button will only be available if the tick is visible.




✱ Enter the device address and the communication password

✱ Click on *Continue*




✱ Click on *Finish* and then the connection will be made

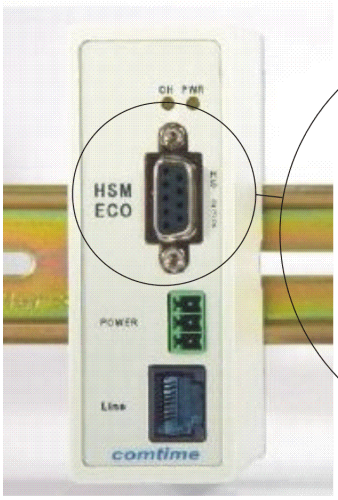
The device is now connected to the PC via the modem.

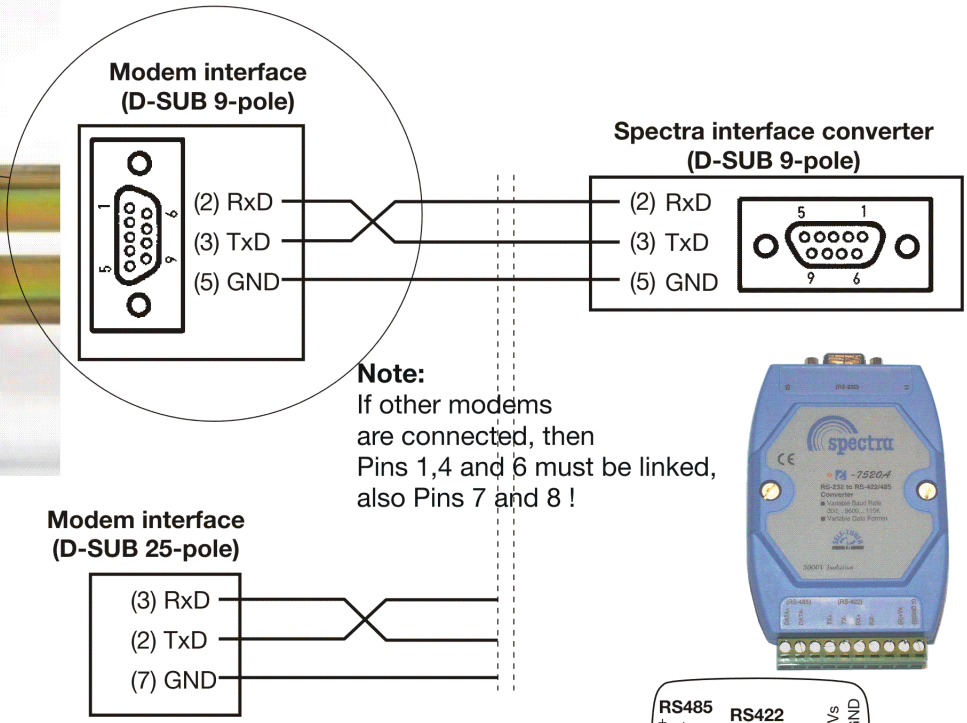
**Check**

If everything has been set up correctly and a telephone connection has been made, then the latest data for the device in the system under maintenance should be visible in the Teleservice window (along the bottom edge of the screen).

## 6.3 Pin assignments

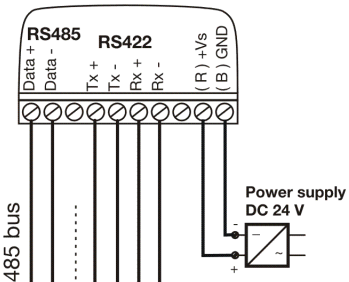
### 6.3.1 Wiring the IMAGO 500 to the device modem







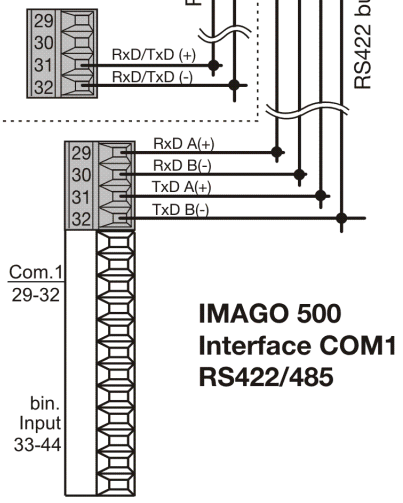



**Back panel wiring of the IMAGO 500:**

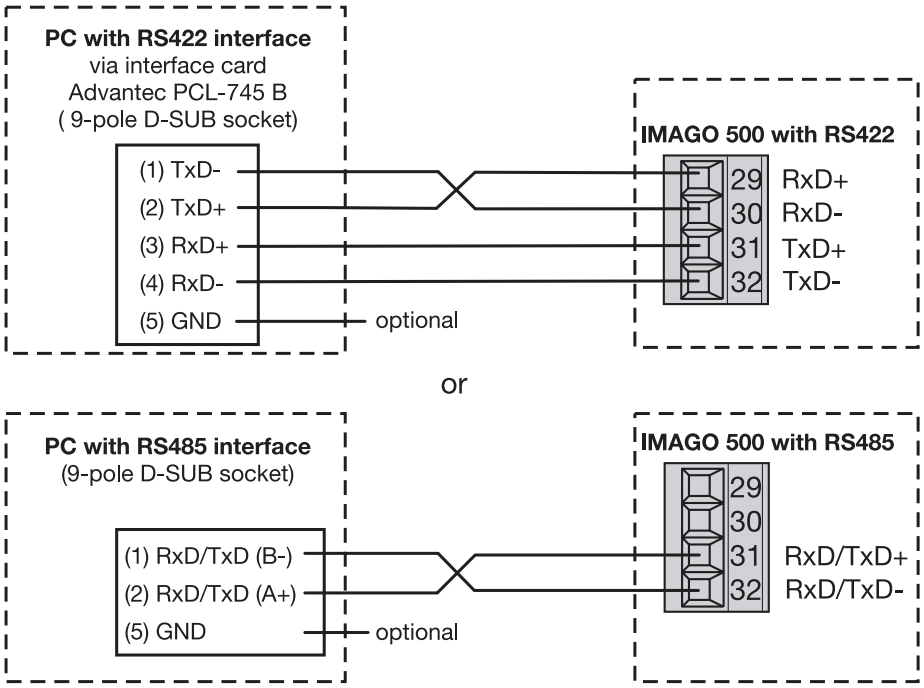
- when using RS485

**or**

- when using an RS422 interface



### 6.3.2 Wiring the IMAGO 500 to the PC via the RS422/485 bus




## 6.4 Tips and tricks

- Many PABXs do not produce a “ready” tone when you lift the receiver. So switch off the option “Wait for ready tone”.
- Slower telephone systems require a waiting time after the first zero. So enter a W with the telephone number (e.g. 0W0123 4567)
- With notebooks, the energy saving function could interrupt the data transmission. So switch off the energy saving function before transmitting data, and run the notebook off a power supply unit.
- The PC should be switched off before attaching a modem for a new installation. This is because the Windows95/98 hardware detection functions most reliably during the boot sequence.
- Do not connect up an analog modem together with a telephone set to the same telephone line, because the device modem will instantly “answer” the phone.
  So callers will always get the modem, not the phone.
  It’s different for ISDN, where the devices recognize which service is being used (data or speech).
- If you want to use a modem with the PC, and do not have a specific driver, try using one of the “Standard XXXXX bps modem” drivers.
- If you have any problems with making or breaking a connection, the file ModemLog.TXT in the Windows directory may help. To make sure that this file is generated, activate the item *Record log file* under *Start* ➔ *Settings* ➔ *System control* ➔ *Modems* ➔ *Properties* ➔ *Settings* ➔ *Expanded*. Deactivate it when the fault has been cleared, and delete the file.

- GSM modem
  The PIN can be deactivated on D1 cards. Then, after switching off and on again, the PIN is no longer required.

**Known issues**

- ELSA Microlink can only handle interface settings with “no parity”.
- Many modems for Windows only function with multi-tone dialing, not with pulse dialing.
- Installing a Fritz!Card PCMCIA wil deactivate any Xircom CardBus 56 Modem that is present.

## 6.5 Device modems

It often turns out that the device and the modems are fitted with Sub-D socket connectors. The modem cable, on the other hand, has one male and one female connector. In this case, a normal commercial 1:1 adapter must be plugged in, with male connectors on both sides (known as a “gender changer”).
Since many modems use RS232 signal levels, an RS422/485 interface converter is also required.
The wiring details can be found in Chapter 6.3 “Pin assignments”.

**Recommended modems**

| **TM3**<br>Analog<br>industrial modem<br>Desktop device | **HSM 33.6**<br>Analog<br>industrial modem<br>for mounting on<br>DIN rails | **HSM ECO TA**<br>ISDN<br>industrial modem<br>for mounting on<br>DIN rails |
|---|---|---|
| | | |
| Part number: 00416613 | Part number: 00416612 | Part number: 00416611 |

If other modems are used for the device, it may be necessary to alter the initialization string. However, it is not possible to guarantee that the connection will work.

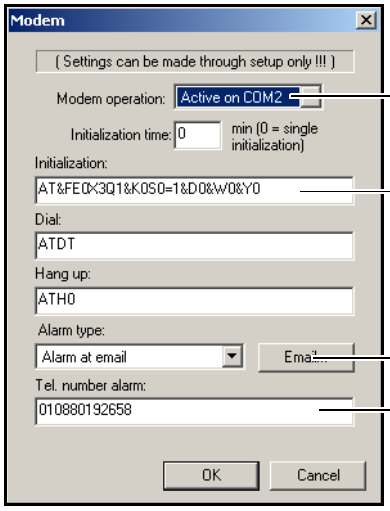
**Interface converter**

The device-modem must be connected to the device via an interface converter (Spectra I 7520A/ISA) that converts RS232 to RS422/485 levels.

☞ If a different interface converter is used, then it must be equipped with an automatic data direction sensing function.

* Connect the device to the telephone network, via the Spectra interface converter and the modem, as per wiring diagram.
* Switch on the modem.

## 6.6 Settings in the setup program




Device interface CMO2, to which the device modem is connected.

**Initialization string for modem**
This may have to be adapted for the modem that is used.

**E-mail settings**

**Dial-up number for the e-mail provider**
Must be appropriate for the “User name” and ”Password” settings for Internet access (in this example: MSN).

The following preset string can be used for the approved modems:
**AT&FE0X3Q1&K0S0=1&DO&WO&YO**

**Description**

| Command | Meaning |
|---|---|
| AT&F | Load manufacturer profile as the present profile |
| E0 | Switch off character echo |
| X3 | Switch off dial tone, switch on “busy” tone setting |
| Q1 | Switch off command responses |
| &K0 | Switch off data flow control |
| S0=1 | Switch on auto-answer function |
| &D0 | Ignore DTR signal |
| &W0 | Save present configuration as user profile 0 |
| &Y0 | Use user profile 0 after switch-on |

☞ If the command set for the device modem does not understand the commands listed in the table, there will be connection errors.
In such cases, the command characters must be used that are shown in the operating instructions for the modem.

### 6.6.1 Initialization string

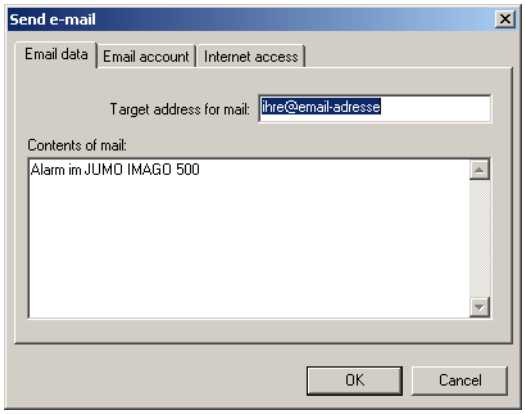
In order to use a modem with the JUMO device, the initilization string must first be transferred to the device in the setup file, via the setup interface.

* Transfer setup file to device.
* Use an ordinary commercial RS232 cable to connect the modem to a COM interface on the device
* Connect the modem to the JUMO device
* Make the connection between the modem and the telephone network
* Connect up the PC modem, as described in the following section

### 6.6.2 E-mail from device

**E-mail content and target address**

Here you enter the target address and the e-mail text that is to be sent from the device.

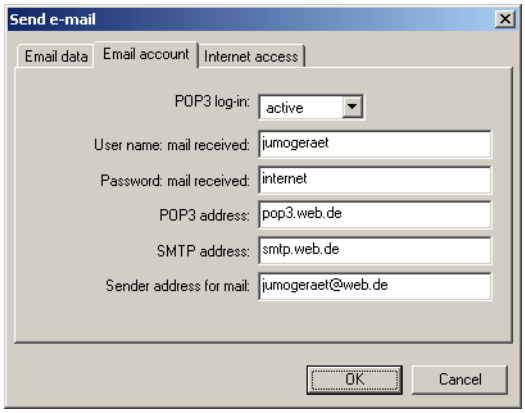



**E-mail account access data**

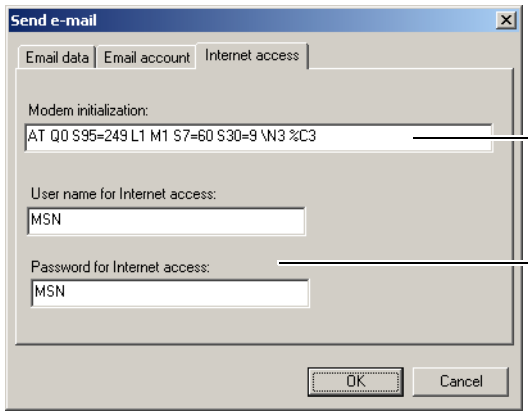
The settings for an existing e-mail account are entered here. These data are used to establish a connection between the device and the above-mentioned e-mail account, and to send a message to the target address.

The address of the e-mail account given here will appear as the sender's address.

☞ You will get the settings for the e-mail account from your e-mail provider (usually in writing).




## Access data for dial-up into the Internet

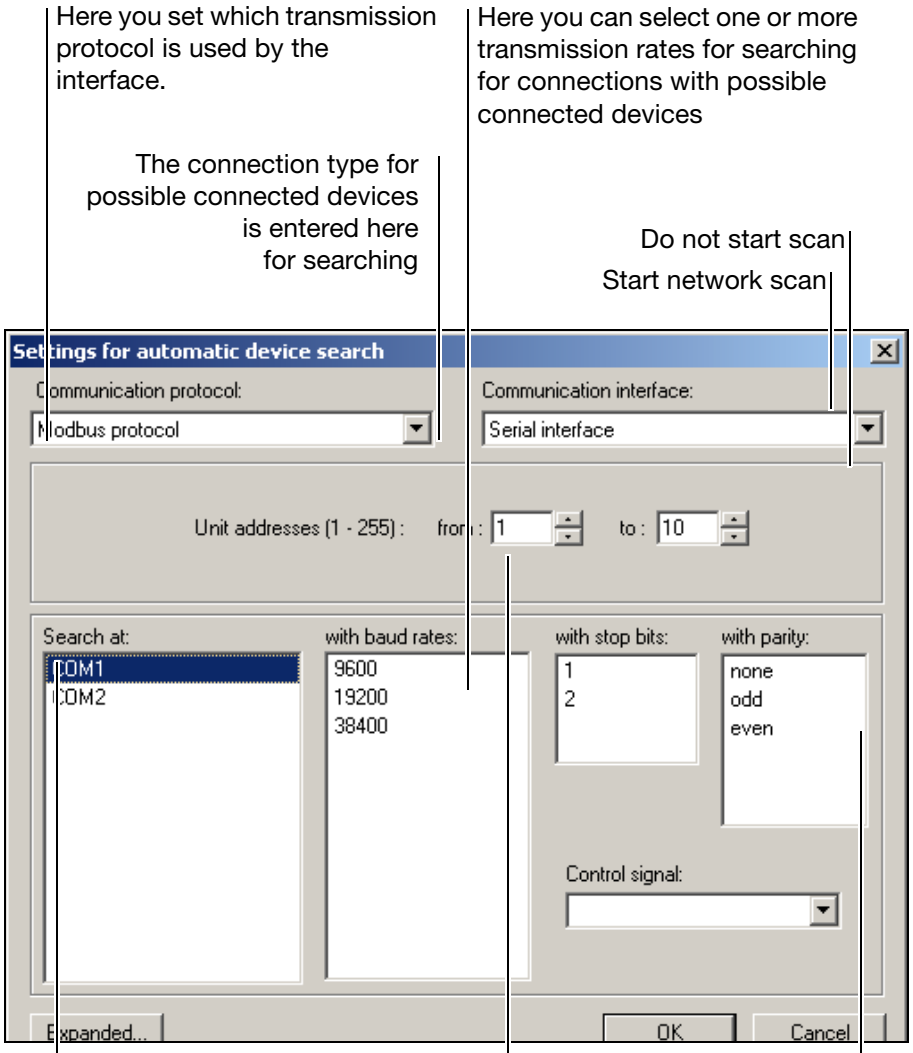



Initialization of the device modem that is used

User name and password (must match the **dial-up number of the e-mail provider** e.g. MSN)

## 6.7 Automatic device detection

Automatic device detection is activated through the *Network scan* button. The following dialog appears:




The *OK* button is used to initiate the scan procedure. All the devices that are found are automatically entered in the device list.

**Important notes**

**Device addresses**

If you want to look for device addresses in both the range from 1 — 10 and 100 — 255, then the entry to be made is: “from 100” and “up to 10”.

**Interface parameters**

If a COM interface (RS422/RS485) is used to operate several devices, then they must all have the same settings for transmission rate, parity and control signal, otherwise transmission errors will occur.

Only one control signal may be used per COM interface.

If, for instance, a device with the setttings 9600bps/1/none is found on COM1, then the system will not investigate any other combinations, even if they are selected.

**RS422/RS485 interface**

Many RS422 or RS485 interfaces do not require a control signal. They will also work with the settings for the RS232 interface.

**General bus problems**

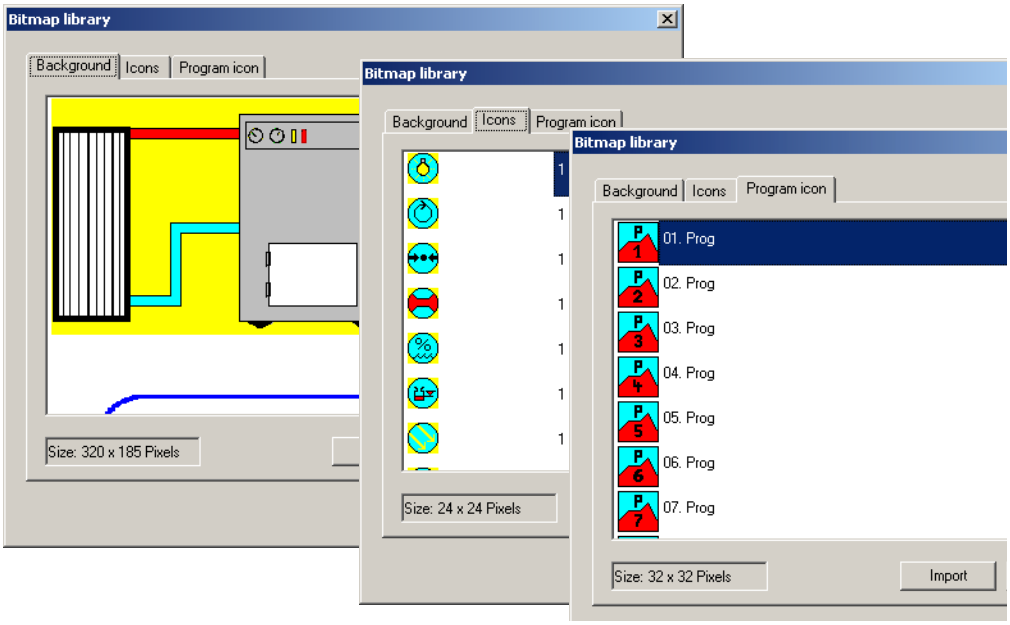
If, for instance, an RS232 is used on COM1 and an RS485 on COM2, then the network scan function must be run twice. The setting “Add new devices to list” must be selected before running the network scan for the second time.

The scan will take longer if more selection criteria are activated, e.g. COM1 and COM2, 19200 bps and 38000 bps, addresses 1 —50 and so on.

The scan procedure can be interrupted at any time by using the ESC key or the *Cancel* button. The devices that have already been found will remain in the list.

## 7.1 Bitmap library

You can transfer pictures and icons that you have created to the device.
A selection of background pictures, icons and program icons appears.

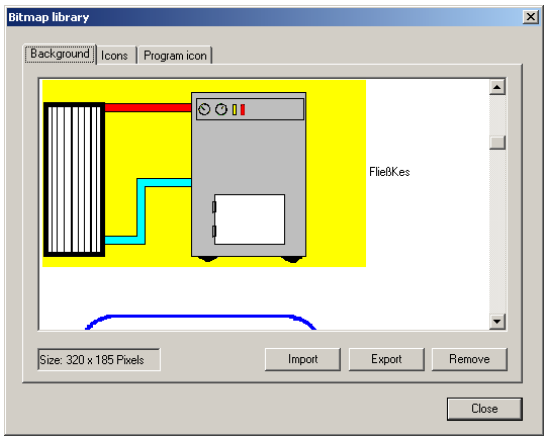



✱ Transfer the icons you want to the list of pictures.

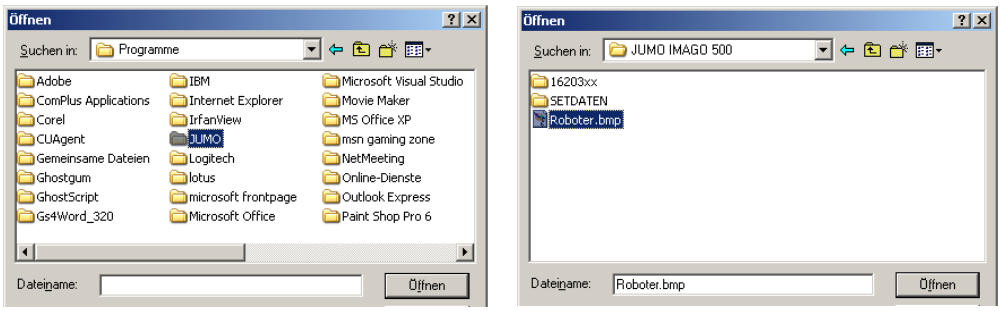
### 7.1.1 Insert a new background picture

Background pictures can have a maximum size of 320 x 185 pixels, with 16 colors from the Windows standard palette. They must first be created in a pixel-oriented (bitmap) program, such as Paintbrush, and then saved in the *.bmp format.

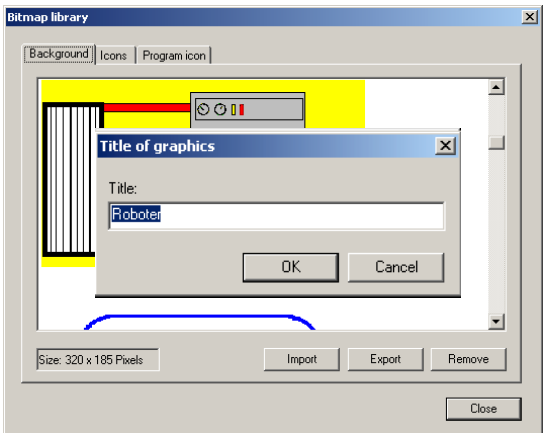
✱ Select *Extras* ➔ *Bitmap library*



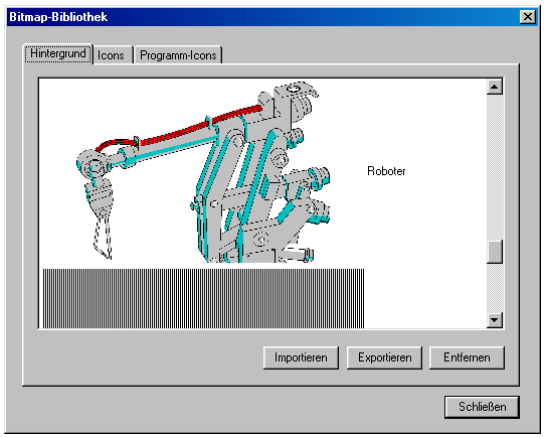

✱ Click on *Import*




✱ Select bmp file and click on *Open*




✱ Enter the name to be used for the picture in the device




The picture is now in the library of background pictures, and can be used for the screen layout.

⇨ Chapter 4.5 “Screen representation”

## 7.1.2 Icons

Icons can have a maximum size of 320 x 185 pixels, with 16 colors from the Windows standard palette. They must first be created in a pixel-oriented (bitmap) program, such as Paintbrush, and then saved in the *.bmp format.

**Further procedure**

As for background pictures

### 7.1.3 Program icons

These must have a size of 32 x 32 pixels, with 16 colors from the Windows standard palette. They must first be created in a pixel-oriented (bitmap) program, such as Paintbrush, and then saved in the *.bmp format.

**Further procedure**

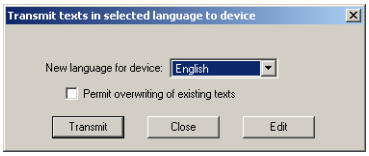
As for background pictures

## 7.2 Device texts library

### 7.2.1 Transfer language to device.

All the texts in the device are centrally collected here.

✱ Click on *Extras* ➔ *Device texts library*




✱ Select the new device language (e.g. English)
The tick mark defines that all the newly translated texts can overwrite those in the device.

✱ Click on *Send*

### 7.2.2 Language table

✱ Click on *Edit*

The table contains 2 columns. The target window (right-hand column) can contain various texts.

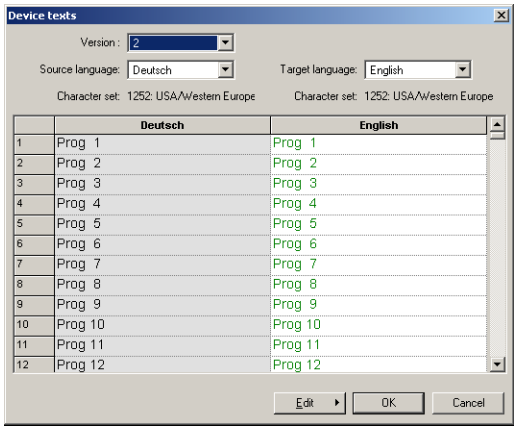
✱ Enter all the texts and confirm them with *Enter*.

**Color indication**

**green**
Text is OK

**red**
Text not yet translated

**orange**
Text is too long, will be automatically trimmed to the maximum number of characters




✱ Check that all the entries in the target window are shown in green

## 7.2.3 Response to a version update

If a new version of a PC program is installed, then the old device texts library is retained and a new one is created with the default (standard) texts.

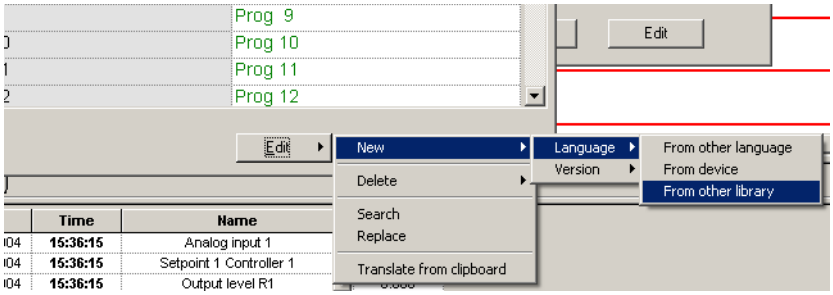
If an old library or language is to be transferred to the device, then this has to be set up in the language functions.

## 7.2.4 Set language functions

✱ Click on *Edit*

Additional functions are now available:

✱ Click on *New* ➔ *Language* ➔ *Language from other library*

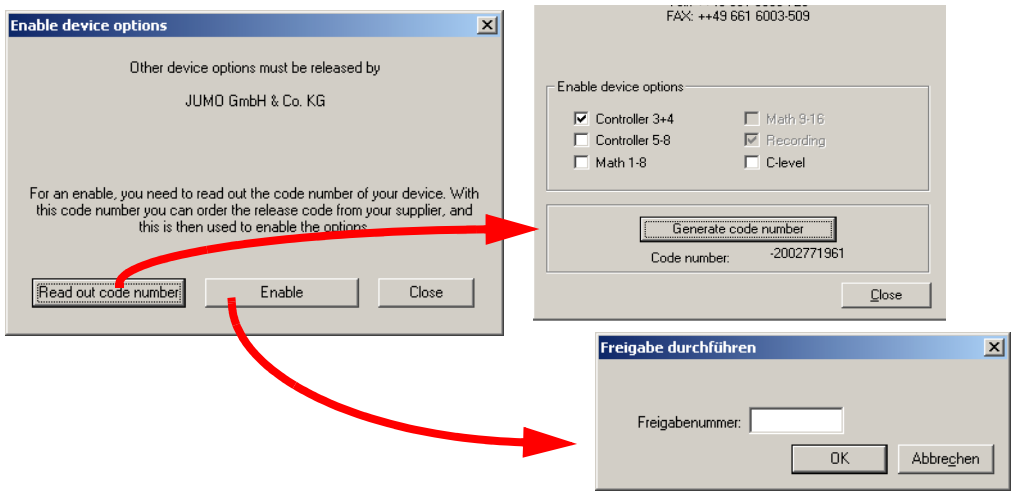



✱ Select the directory and file for the old library

✱ Click on *Open*
The old library is now set, and can be transferred to the device.

## 7.3 Enable device options

* Under *Extras* ➔ *Enable device options* press the *Read out code number* button
* Mark the required option and click on *Generate code number*

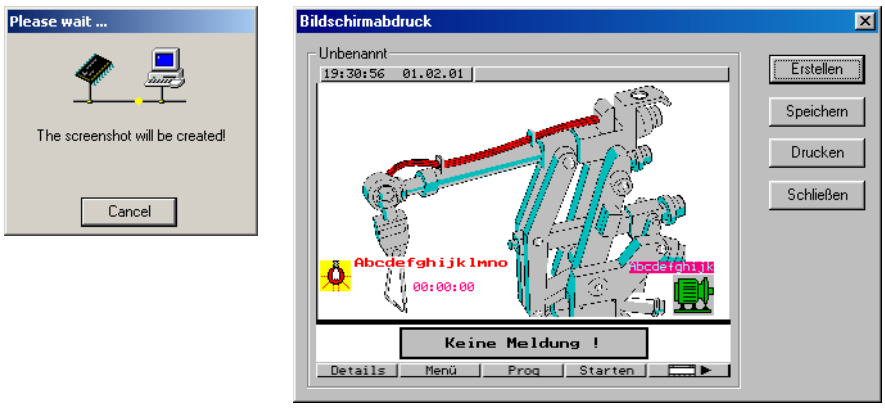



* You can get a release number from JUMO when you quote the number shown here
* Click on enable, enter the release number and click on OK

## 7.4 Create screen printout

This function saves the color screen image as it is presently displayed on the IMAGO 500, as a bitmap file that can be given a freely chosen name.

* Create *Extras* ➔ *Screen printout*




* Use *Save to* save the screenshot under a freely chosen name.

The color screen has 27 colors, which must be restricted to the 16 colors from the Windows standard palette.
This restriction may lead to slightly falsified colors. The age of the color screen, the contrast and the color setting for the PC monitor can also affect the color interpretation.

# 7 Extras

## 7.5 Adjust and test

**Caution**

The device must be disconnected from the rest of the system.

Smoke generators, heating systems and cooling blocks must be switched off.

This function has a major effect on the operation of the device, and must only be carried out by properly qualified personnel with suitable calibration equipment.

**Misuse**

Incorrectly adjusted and calibrated measurement inputs will produce faulty measurements. The device will not perform the correct control operation and the guarantee becomes invalid. The device no longer has the assured product characteristics!

**Factory setting**

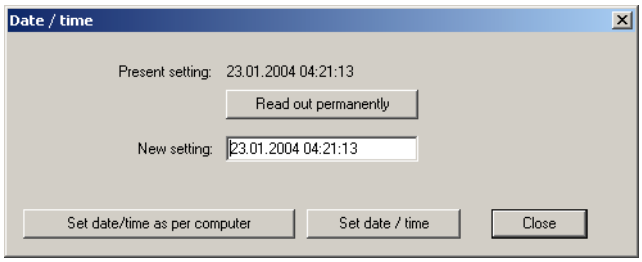
The device can **not** be restored to the **ex-factory condition** as a result of this action.

## 7.6 Date and time

The time that can be set through the setup program refers only to transmission to the IMAGO 500.

It does **not** make any alteration to the date and time in the PC.

✱ Run *Extras* ➔ *Date and time*

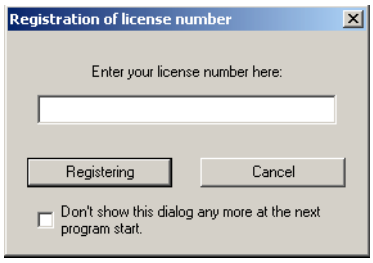



✱ Click on the button for “Set date/time as per computer”

## 7.7 Enable program options

You can use this function to enable additional software options, or to read out your license number.

✱ *Extras* ➔ *Enable program options*



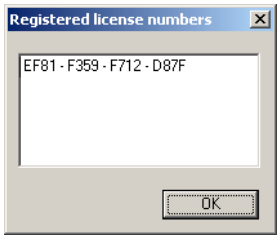

✱ Enter the license number and click on “Registration”

After successful registration, the program must be closed and then restarted, so that the newly enabled options become active.

**No Windows restart** or **Deinstallation** is required!

### 7.7.1 Forgotten the license number?

✱ Click on *Info* ➔ *Registered license number*




Your license number for the installed software will now appear.

Various software modules can be enabled, depending on the license number.

# 7 Extras

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