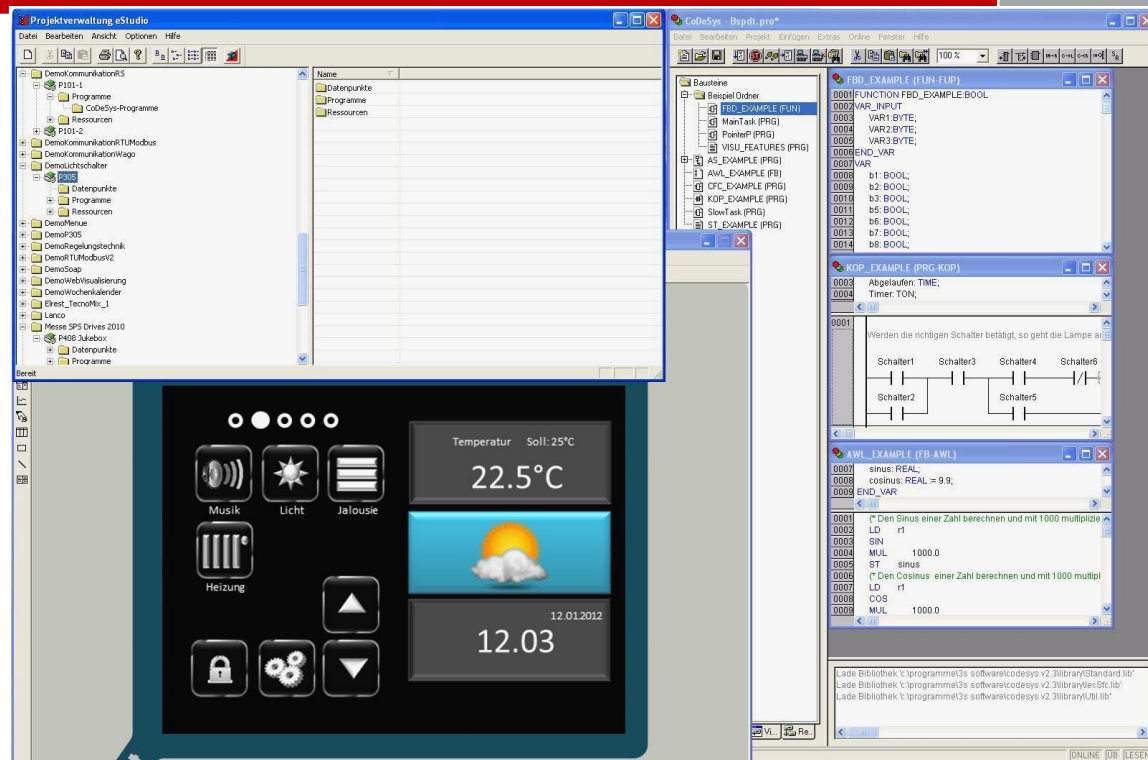


Quick Start eStudio Version 2.91



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1 Welcome to eStudio

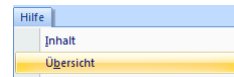
We would like to congratulate you on the purchase of the graphical programming tools eStudio.

With eStudio you have a professional programming tool for graphical programming of HMI (Human Machine Interface) and PLC (Program Logic Control) acquired application. In eStudio united programming tools and libraries to get you access to the world of the graphic programming, in which you in the simplest way even the most complex tasks and problems designing, design and programming.

We are convinced that eStudio you in their work in the future will be crucial to support and give them a rational and cost sensitive implementation of their tasks at the highest level possible.

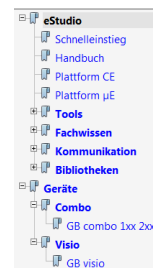
Our products can work with a wide variety of hardware configurations, in addition, we should be constantly to extend and improve the range of products.

For an overview of the software and hardware products, both hints and support open in the  Project Management "Help→Overview".

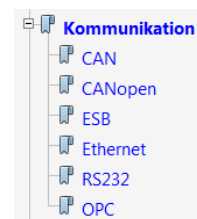


Included are:

- eStudio all important manuals. To complement this is the Guide to Getting Started With eStudio present. More on the topics the devices (target system) are the platform of the appropriate operating system CE or μ E described.
- Devices The statements of each of the device descriptions for each product family



Under communication the following interfaces are described in more detail.



The following interfaces are supported by elrest:



Digital Interface to Terminals

VGA

Analogues Interface zu Terminals



Analog interface terminals to interface to all peripherals, such as USB stick, keyboard, mouse, printer, and other.



Serial interfaces RS232 and/or RS485. This can be with any UART protocols or the prepared protocol Modbus RTU-powered.

CAN

Open fieldbus interface to any CAN protocols, such as for example Truck-Norm J1939-based.

CANopen

CANopen is a widespread Layer7 protocol for automation.

ESB

Elrest system bus, a CAN based self configure system bus.

Ethernet

Under Ethernet can be TCP-Modbus as UDP or TCP will be used. Continue on the basis of socket functions can be added further protocols.

Following Icon's are used:



Click to left hand mouse button



Click to right hand mouse button







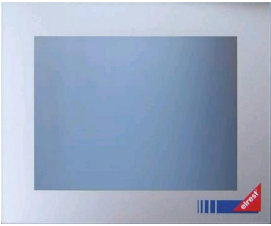




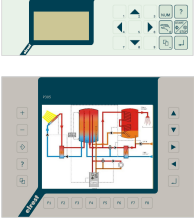

Double Click to left hand mouse button



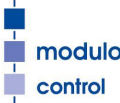




The management of the project is the central launcher on the entire eStudio environment.


















1.1 Overview HMI Products

Device family	Device derivate		Interfaces	Operating system
visio terminal	T070, (T090), T290 		CAN	
	PTE404, PTE407 	Web VNC- Client	Ethernet 	 
	T710, T712, T715 		 VGA 	none

<p>visio control</p> 	<p>P090, P101, P303, P305</p> 	<p>ElaDesign- Visualisierung</p> 	<p>RS 232 RS 485</p> <p>CAN / CANopen</p> <p>ESB</p> <p>Ethernet</p>	<p>Windows JE</p> <p>Realtime > 10ms</p>
	<p>P203, P205 STN, P205 QVGA-TFT, P205 VGA-TFT</p>  <p>P406, P408, P410, P412</p> 	<p>ElaDesign- Visualisierung</p>  <p>CoDeSys V2-Target Visualisierung</p> 	<p>RS 232 RS 485</p> <p>USB UNIVERSAL SERIAL BUS</p> <p>CAN / CANopen</p> <p>ESB (nur bei ED)</p> <p>Ethernet</p>	<p>Windows CE.net</p> <p>Realtime > 1ms</p>
	<p>P715</p> 	<p>ElaDesign- Visualisierung</p>  <p>CoDeSys V2-Target Visualisierung</p> 	<p>RS 232 RS 485</p> <p>USB UNIVERSAL SERIAL BUS</p> <p>CAN / CANopen</p> <p>Ethernet</p>	<p>Windows CE.net</p> <p>Realtime > 1ms</p>

1.2 Overview PLC Products

Device family	Device derivate		Interfaces	Operating system
modulo control 	IT1.2 		RS 232 RS 485 CAN ESB Ethernet	
	DI16, DIO16, AIO8		ESB	

combo control 	CM100, 101, 110, 111  + T070, (T090), T290	ElaDesign- Visualisierung 	RS 232 RS 485 CAN / CANopen ESB Ethernet visio terminal	 Realtime > 10ms
	CM211  VNC-Server WEB-Server + T070, (T090), T290 only ElaDesign + PTE40x-VNC-Client + PTE40x-Web only CoDeSys-TV	ElaDesign- Visualisierung  CoDeSys V2-Target Visualisierung 	RS 232 RS 485  CAN / CANopen ESB (only ED) Ethernet visio terminal	 Realtime > 1ms
	CM710  VNC-Server WEB-Server + T710, T712, T715 + PTE40x-VNC-Client + PTE40x-WEB	CoDeSys V2-Target Visualisierung 	 VGA RS 232 RS 485  CAN / CANopen Ethernet	 Realtime > 1ms
	CS100, 101, 110, 111 		RS 232 RS 485 CAN / CANopen ESB Ethernet	
	CE100, CE101 only CM1xx CE130 only CM2xx CE152 		none	none

1.3 Operating Systems

We distinguish between the operating systems in

μ E, a developed by elrest preemptive multitasking operating system, and

for more details see : „[Plattform mE EN](#)“.



CE, a from Microsoft © preemptive multitasking operating system developed for industrial applications.

For more details see : „[Plattform CE EN](#)“.



XP, a from Microsoft © developed preemptive multitasking operating system.



Linux, a preemptive multitasking operating system for industrial applications.



1.4 CoDeSys

Automation is elrest Alliance Partner of the company 3S software (www.3s-software.com). CoDeSys is a PLC programming tool with various language elements. CoDeSys is now in more than 150 customers in use around the world. This means that thousands of users daily use CoDeSys. Thus, elrest on the Standard CoDeSys.

1.4.1 CoDeSys SP

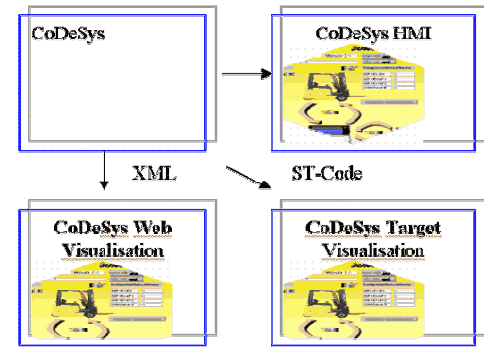
CoDeSys SP (Soft PLC) is a PLC-runtime kernel for PC-based and Embedded readily. You probably already know CoDeSys, the successful IEC 61131-3 programming tool for programmable logic controllers. This proven tool is the programming environment for CoDeSys SP - for you, this means in particular that you are on the stability and security in the creation of application can rely. CoDeSys SP runs on virtually any hardware. So you have a free hand in the selection of their devices. The same is true for real-time operating systems. CoDeSys SP supports the following systems:

- elrest μ E
- Windows CE

In the Document Librarys_EN.pdf are all listed by elrest supported libraries. Additional help for the CoDeSys SysLibs, refer to the installation directory of CoDeSys e.g. C:\Programs\ 3S Software\CoDeSys v2.3 \Help.

1.4.2 CoDeSys Target Visualization

The data in a programmable control unit with the CoDeSys be able to visualize no additional tool is required. The programming system includes an integrated visualization editor, so that the user already in the context of the application development screens in one and the same surface can produce. Directly in the programming system created to test the screens, but also for service and diagnostic purposes directly in connection with your control, you need no further Tool: with the online connection of CoDeSys immediately you have to control the actual representation of the masks within the programming.



CoDeSys HMI - the Windows- Visualization the Win32-Program CoDeSys HMI, with the screens on the PC the without the full development interface can be displayed also communicates via the programming interface - OPC or DDE-configurations are not required. Optional Web visualization generated from the CoDeSys information of visualization an XML-description, together with a Java applet on the control and stored via TCP/IP on a browser can be shown. Thus, the data of visualization on the different platforms available online. Target- visualization for controls with built-in display the information of visualization can from the programming system in IEC 61131-3 and converted to the code with the code generator for the corresponding target system be translated. This solution may be in any with the CoDeSys programmable devices be ported.

1.4.3 CoDeSys SoftMotion

Motion functionality integrated into the CoDeSys programming and runtime system - this is CoDeSys CoDeSys SoftMotion. The areas of application range from single-axis movements on cams up to CNC-interpolation

In contrast to previous solutions, the motion tasks with monolithic, hardware-dependent control systems realize the CoDeSys SoftMotion **provides CoDeSys movement** functionality in the form of a kit. You can base on the IEC-language resources any easy way to solve complex problems. The axis are in abstracted form made available to as a data structure, and regardless of bus connections and drive manufacturer. The concrete connection to the fieldbus is performed by a driver interface. For the configuration of the drives is available to you in the CoDeSys Integrated Configuration Tool with special dialogs available. In it, you can the fieldbus interfaces), axles and drives integrate and comfortable configuring. On the basis of this design are different models of the motion control as IEC-blocks are offered:

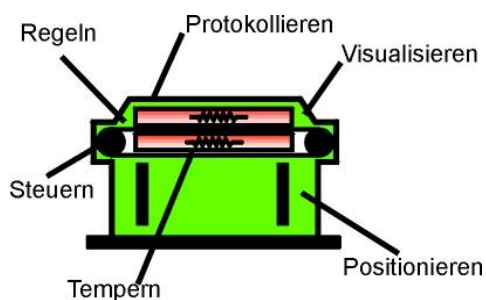
- certified PLCopen Motion Modules
- electronic cam
- electronic cams
- 2 ½ D NC-control.

These CoDeSys CoDeSys SoftMotion is a separate package and not part of the scope.

2 Example Programs


What to do?


- Speed - Rules!
- Transitions- taxes!
- Tools- tempering!
- Cargo- positioning!
- Operations- Visualize!
- Events- Logging!




My considerations, what I want?

The mechanical design of the system / machine is completed. Now the details are worked out. Motions, velocities, forces and processes should be controlled or regulated in defined sizes. To this end, various sensors and actuator products (SUA) are required. For this the market offers a variety of SUA with electronic interfaces. For these interfaces elrest provides a variety of free programmable devices. Based on the hardware requirements the appropriate devices (modules) can be chosen. The function will be programmed free in later steps.


Start the project management , according to a new installation displays a blank project window.

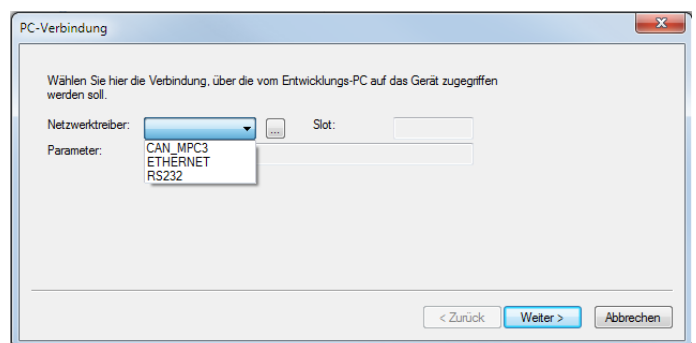
With the  new icon can be created a new folder or a project. Choose the project and then a self-speaking project name eg "my first project".

Chose the project name again and press , so a configured device can be selected.

It appears a dialog for selecting one of the available networks. You can choose between:

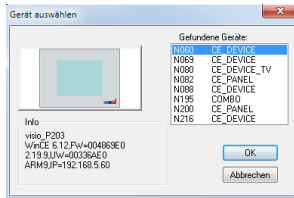
- Ethernet (recommended standard)
- CAN
- Serial interface RS232

Then type in the  parameter dialog, the necessary parameters, depending on the chosen network



Use the **Weiter >** button to get to the configuration of the device. The easiest way to find and adjust a device is using the **Autoscan** button.

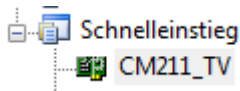
A list of discovered devices in the network: will be appeared.



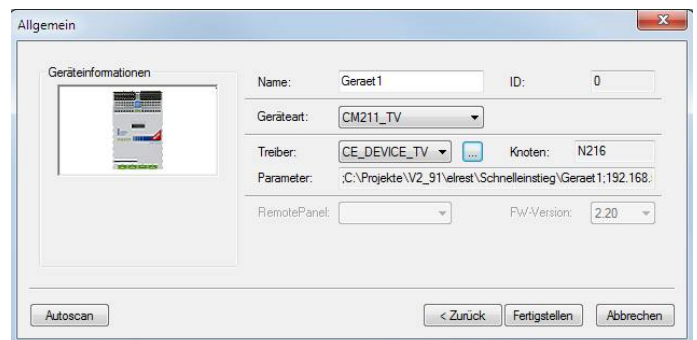
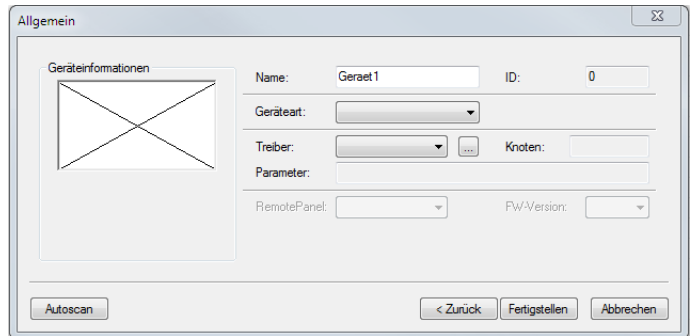
Here you can easily take over the desired device with the **OK** button


It will even enter a meaningful name eg "CM211_TV" and complete with **Fertigstellen**

In the project tree appears



the registered project name and the associated equipment. Would you like to manage multiple devices in a project, simply repeat the steps above.

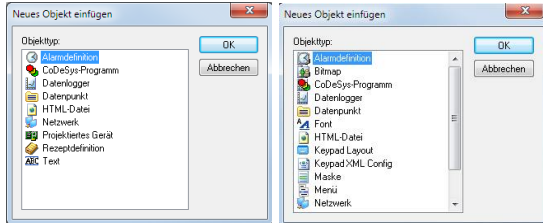


Select the device name and press the  New icon again, depending on the selected programming device, different programs (CoDeSys, C / C + +) or HMI visualization can be selected.

ElaDesign- Visualization (future short-term ED)



In an ED device appears the object list:



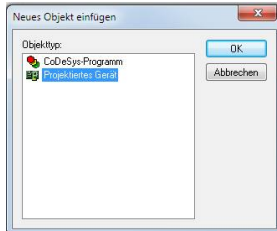
Here you can create CoDeSys program and many other objects.

If you have selected in the device settings RemotePanel: T290 a remote panel, then will be more objects available for ED visualization (screen, font, etc.).

- CoDeSys V2-Target Visualization (future short-term **TV**)





In a TV device appears the object list

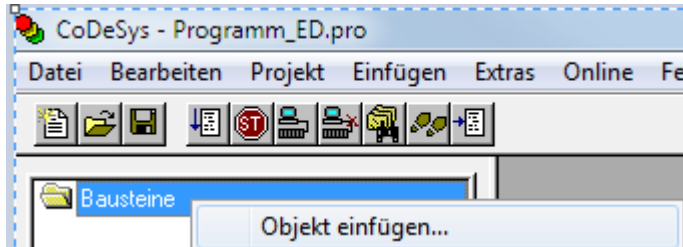



Here you can create only a CoDeSys target visualization program.

2.1 CoDeSys SPS part of the programming

Select the device name and press the  New icon again and select  CoDeSys-Programm , then enter the program name, for example, "Programm_ED" of the CoDeSys program. It opens the installed CoDeSys V2 program.

You can then directly



insert an object, a creating a first program, the default name will be "PLC_PRG" under the language  ST. Of course you can also choose one of the other languages: AWL, KOP, FUP, AS or CFC

It seems the editor and we will write our first little program.



ST

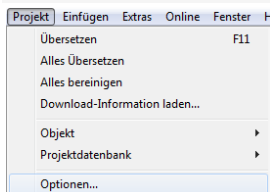
```
PROGRAM PLC_PRG
VAR
    VarA: BOOL;
    VarB: DWORD;
    VarC: REAL;
    Alpha: REAL;
    DatumTrend: DATE;
    tTimer: TIME;
END_VAR

IF TIME()-tTimer > t#1s THEN
    tTimer := TIME();
    VarA := NOT VarA;
    VarB := VarB + 1;
    Alpha :=Alpha + 1.0;
    IF Alpha >= 90 THEN
        Alpha := 0;
    END_IF
    VarC := 50.0 + 50.0 * SIN(0.0698131700777 * Alpha);
    DatumTrend := d#2012-06-02;
END_IF
```

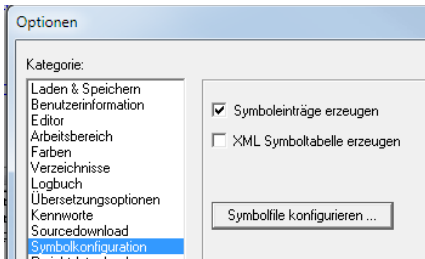


You can take on this program code with COPY and then with the CoDeSys programming editor INSERT, this saves unnecessary typing.

To these generated variables are also be available in eStudio, it have to be opened unique among:



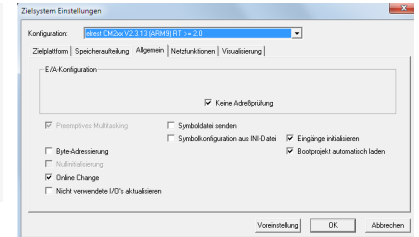
Project → Options



Options → configuration icon

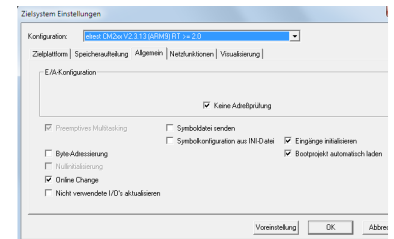
Selected Symboleinträge erzeugen, opened the dialog with the button and activated the options Variablen des Objekts ausgeben.

Change to the tab folder Ressourcen, with in Zielsystemeinstellungen, you can on the tab folder Allgemein activated the options Bootprojekt automatisch laden. Then, with each download, the program automatically stored retentive.

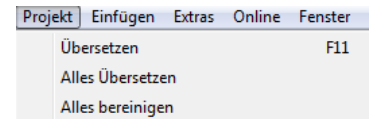


In the same tab folder Ressourcen, with in Taskkonfiguration you can with choose "attach task". Enter in your desired cycle time, eg 10ms. Activate the Task

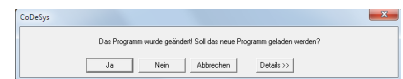
and with , it appears and choose „program call attach“. Choose the desired e.g. „PLC_PRG“



Click on Project „Clear all“, afterwards „Translate all“ and then „Online→log in“. download the created program and everything will be done.



If you already have a program running on the device, a message appears: Please confirm with "Yes". With Online→Start you will start the execution of this program.



2.2 CoDeSys with ElaDesign (ED)



Use our free monthly one-day workshop with the topic ElaDesign

In a one-day training you get the safe use of the tool and a deep understanding of all topics.

Go back to project management. Select the device name, with and "Change" you will be back to the preferences dialog for the device. In the parameter dialog, you can select with the newly generated symbol file. It shows:

Symboldatei: C:\Projekte\V2_91\elrest\Schnelleinstieg\CM211_ED\CoDe

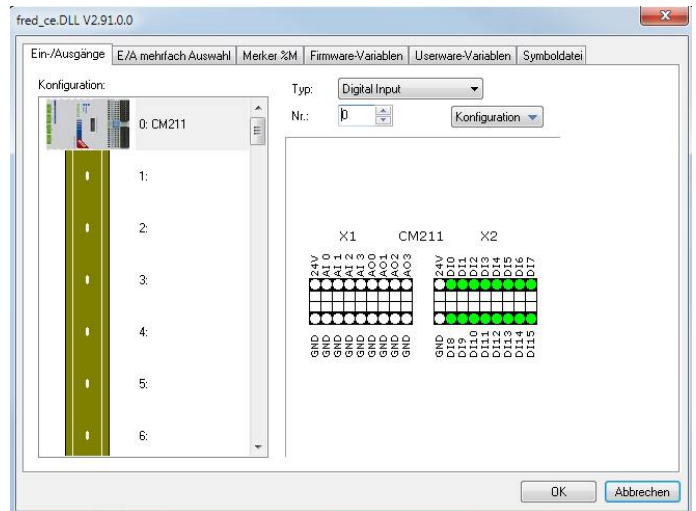


You need to each change of the CODESYS program, also the selected corresponding icon file. It is a common practice under a project to manage multiple CoDeSys program

Press the NeW Icon, it appears the object dialogue and we select Datenpunkt

The dialog box for creating all data points. Data point are

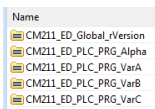
- E/A, all digital, analog and frequency inputs and outputs.
- Markers
The traditional mode of operation at data point.
- Firm- und Userwar variables
These are special system
- Icon file
Here is the interface to the CoDeSys
- Change to the tab „Symbolfile“.



It will give you all the variables shown in CoDeSys scale.

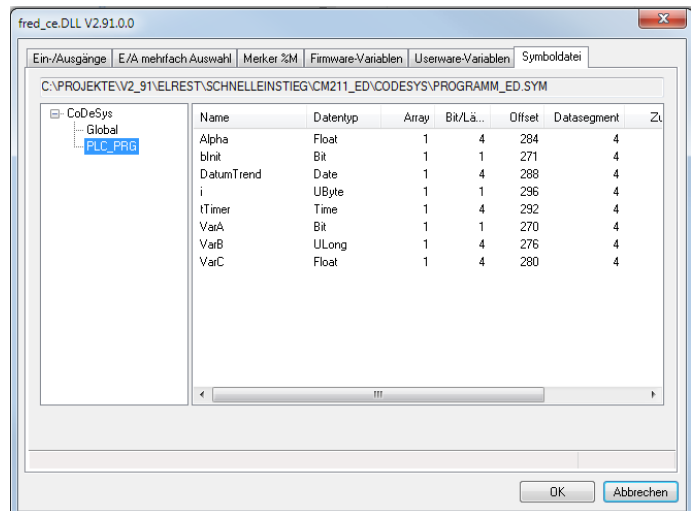
Select one or with Shift + several CoDeSys variables, that will automatically generate data points.

Confirm the next dialogue with and even the variables which are generated in CoDeSys will be available






as data points in



the project management




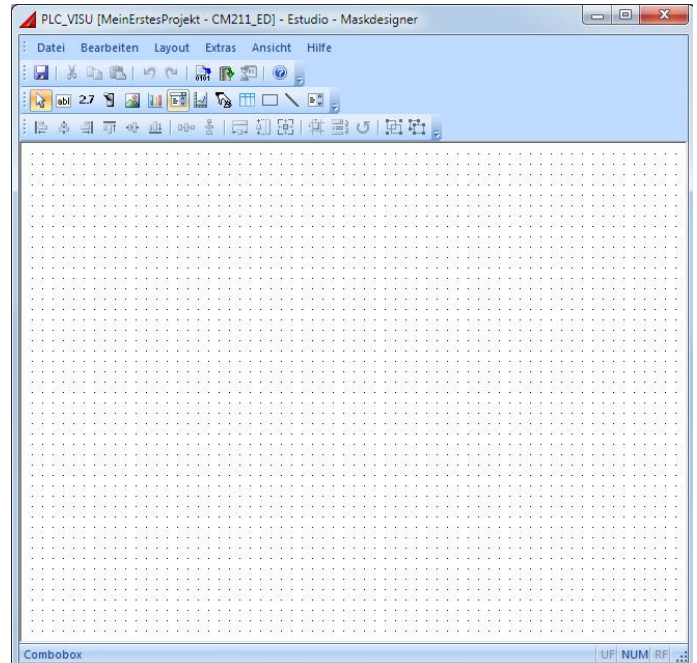
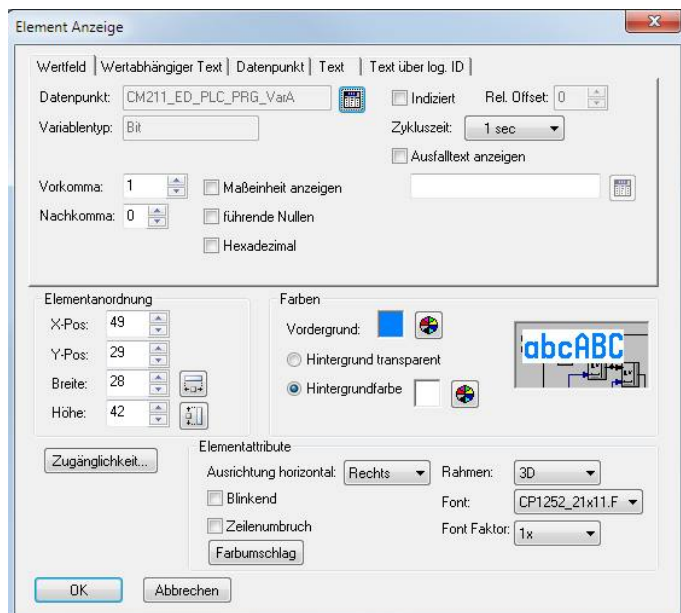
2.2.1 ElaDesign Part of the programming


This section describes the design of masks

Select the device name and press  the New icon again and select from the objects the object  Maske . with  .Enter the desired name of the mask, for example, "PLC_VISU" , you will entered in the a mask designer of eStudio

Choose from the tool bar the item "Display"  and with  in the drawing window, you can place this element as many times as you like.



With  you will get to the positioned element in the setup dialog for the selected element:



With the button  you can select any of the selected data points.

Add in a display box for

- [CM211_ED_PLC_PRG_VarA](#)
- [CM211_ED_PLC_PRG_VarB](#)


Choose from the tool bar, the element "input"  and with  in the drawing window, you can place this element.

Change:

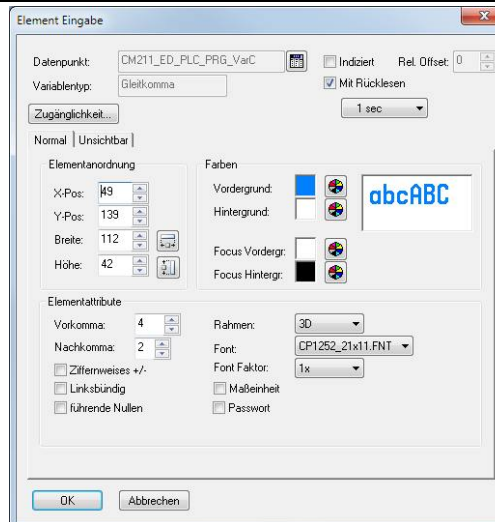
- Data point: `CM211_ED_PLC_PRG_VarC`
- Frontcolor
- Frame
- Font
- Digits before
- Decimal

and finally with  and  the width and height can be determined.

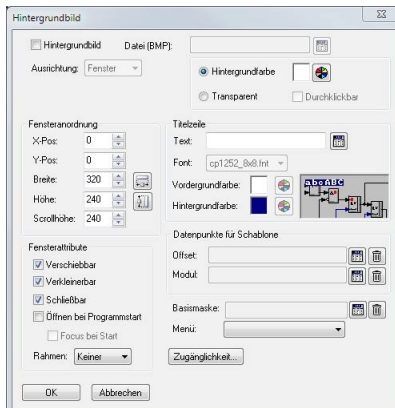
Copy this input field with „Edit→Copy“ and subsequently with „Edit→Insert“ paste this.

With  to the new element to choose the data point:


`CM211_ED_PLC_PRG_szText`



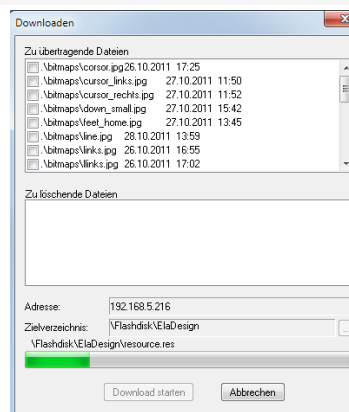
If no item is selected, you can enter with  in the drawing window in the setup dialog of the background



Here you can set background images, etc., choose **Öffnen bei Programmstart** for the first mask, and then **Hintergrundfarbe** and finish the dialog with OK.

With the button  you can start the download to the selected device; it is performed automatically before a compiler process of the resource file. The following picture appears:

To speed up the download process, only the changed files, see list in the upper, loaded down




In  the project management, re-select the device name and with  you can select the [Internet Explorer](#)

It appears the MS Internet Explorer with the projected values

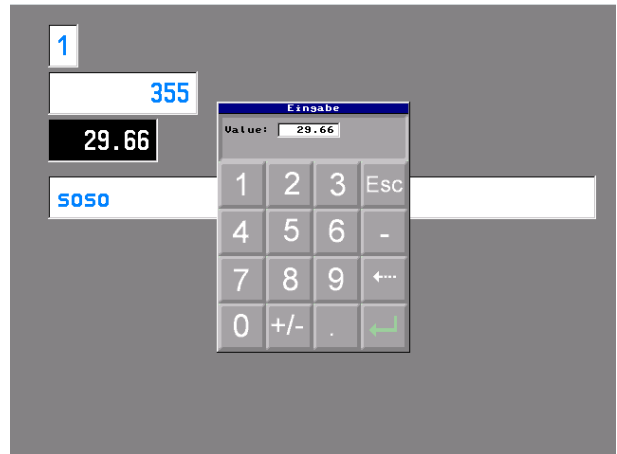
By entering of numeric values the Numpad

(keypadnum_gr.xml) will be opened and by



entering an alphabetic value  the keypads_de.xml.

In the manual you can read about how to create custom language-specific pads



For designing an attractive user interface first will need a gallery of Icon will be necessary. The following sources of images are available





Footage that was already integrated in the project

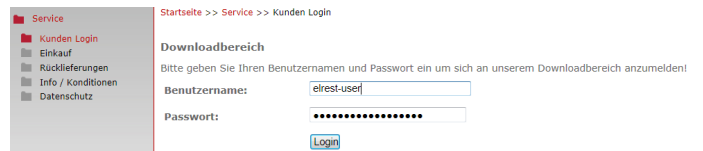
Images from the gallery included.

Images directly from a directory



The easiest way is to implement new projects quickly and efficiently, if a finished mask (above) will be completely copied of another project. From the project management , you can go with the button  on the homepage [elrest Homepage](#)

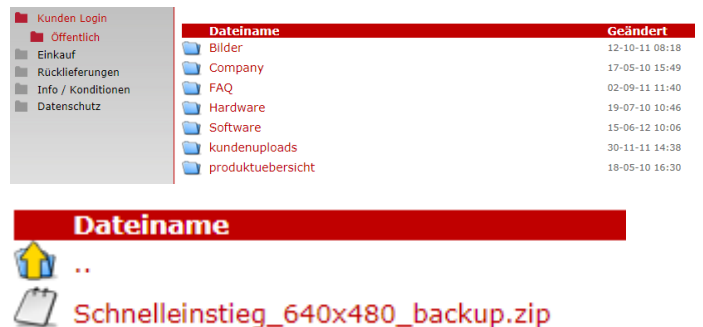
After Service → customer Login you get to the public download area. You obtain the password at the first time directly after a request to support@elrest-gmbh.de




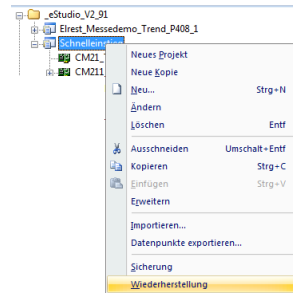
Afterwards change to Public → Software → DemoApplications → V291


Select one of the Demos, e.g.

„Quickstart_backup.zip“ with  und „Save target as“ you can download the ZIP file.

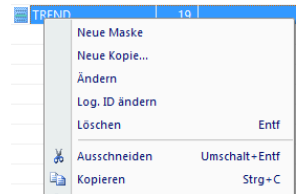


Back in  project management, you can select any project in the desired destination and with "Restore" the complete project with all the devices can be included in the the project tree



















Open in  the project management the inserted project and copy such as the Mask "Trend" and subsequently in our Quick Start project. We already have the mask:

!DEFAULT_COMPO...	1
!DEFAULT_DESKTOP	32
MASKE1	51
!TREND	155




inserted, at the same time, the necessary images copied into the project


Name
 Corsor.jpg
 Cursor_links.jpg
 Cursor_rechts.jpg
 down_small.jpg
 Line.jpg
 links.jpg
 lLinks.jpg
 Lupe_down.jpg
 Lupe_minus.jpg
 Lupe_plus.jpg
 rechts.jpg
 rrechts.jpg
 Taste_change.jpg
 Taste_change_green.jpg
 Taste_change_red.jpg
 Taste_leer.jpg


It remains to reassign the data points in this mask, we will catch up later

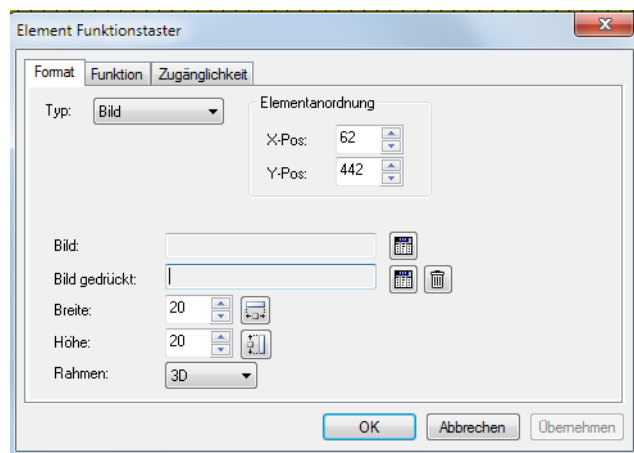
First, the navigation will be complemented


From the  project management, we open with our start screen "PLC_VISU".

From the toolbar activate the element  function

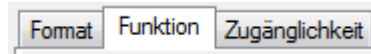
key. With  an element will be positioned in the

drawing window. With the  the setting dialog will be opened. First, the corresponding image will be insert.

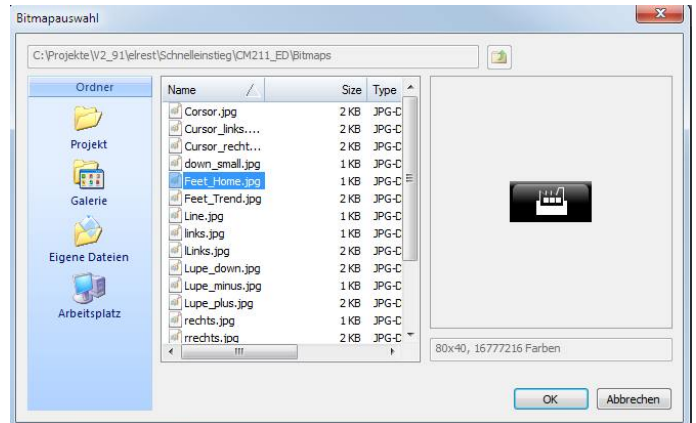


Seek out of the gallery  from the subfolder "buttons" a button: for example, "Feet_Home.jpg".


Now the button has to be assigned a function, therefore on the tab folder the function will be changed.:




and choose as a switching type "close screen". After we move the item to the bottom right.

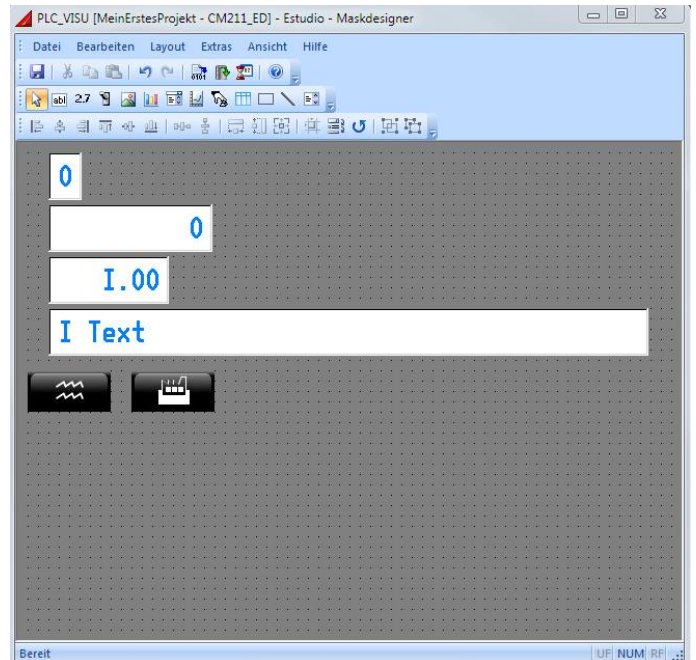






With „Edit→Copy“, „Edit →Insert“ a second element will be positioned in the drawing

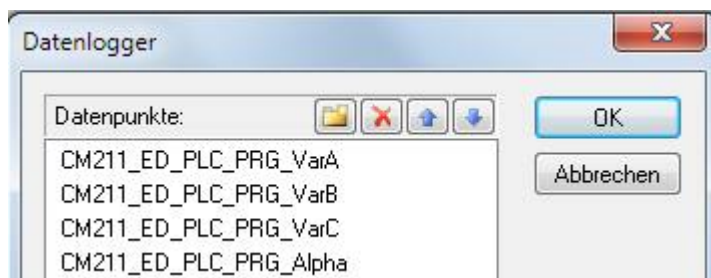
picture With a  whose setting dialog is opened and an image can, for example, "Feed_Trend.jpg be inserted




On the tab folder function: choose as a switching type "mask without consequence cancel" and select the mask  as "TREND" . After you move the item down on the left.

Your design mode should look similar to the following illustration




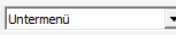

Open the  project management and select our project, then appeared with  the new icon the known object selection dialog, we select.  Datenlogger With  new data points will be added, then ... we choose the applied data points. It should include the following data points:




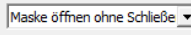
Furthermore, we choose in the  project management, the  new icon, it appears the known object selection dialog, we select  Menü and enter the name "menu1"


It opens up a new program so menu structure can be created

With  the dialog box will be opened, and select

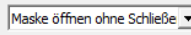
Typ:  Untermenü and as title "program" after select  it appears the next field below.

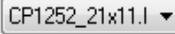
With  on the box that appears below, we choose

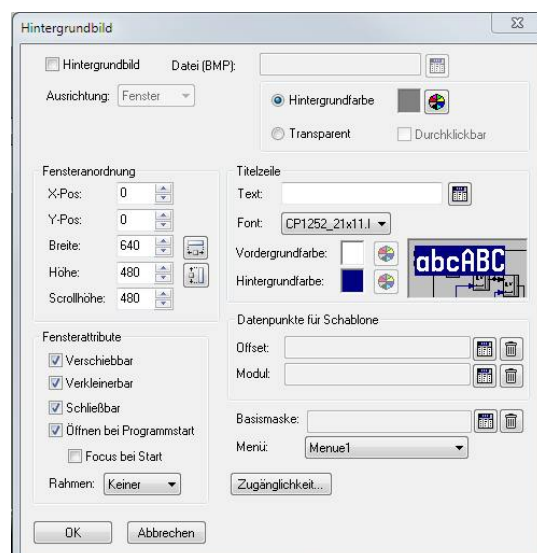
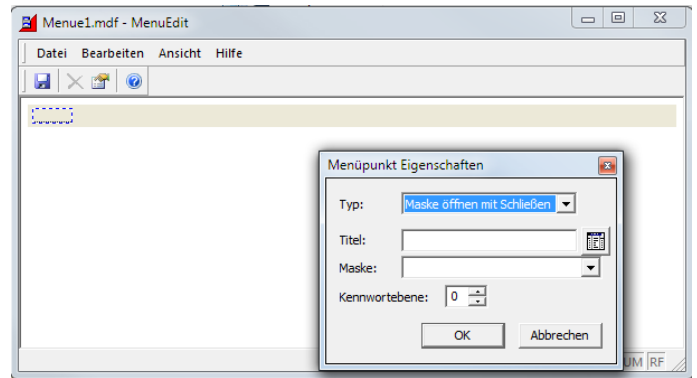
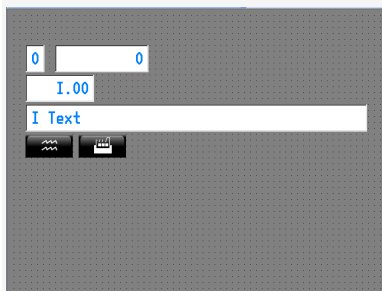
Typ:  Maske öffnen ohne Schließen as the title "Trend curves1" and "Trend" as a mask.




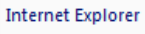
With  on the bottom field choose "Program End" as the title "Back to the operating system." choose "Program End" as the title "Back to the operating system."

With  on the right side of the appearing field

choose again Typ:  Maske öffnen ohne Schließen as the title "Home" and "PLC_VISU" as a mask.

Open again the background image of the mask "PLC_VISU" and select in menu the created "menu1" and Font:  CP1252_21x11.1

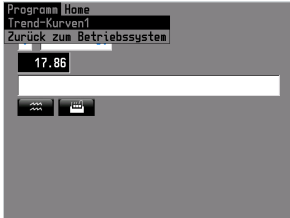



With the button  you will start again the compilation, and then with  the download. Finally, if it is not still opened, start from the  project management the 

It appears the MS Internet Explorer with the projected values

The head- line shows the created menu, among them two display areas and two input fields. In the footer are two navigation - buttons for the mask "Trend" and "Home".

If you choose the menu, the sub-menus will be unfold.




If you press the button  the screen will be closed and a blank page will be appeared. The „!DEFAULT_DESKTOP“. You can prevent this if you in the background image dialog the option Schließbar of a mask by clearing with a mask in the background image option dialog.

If you have no elements on the „!DEFAULT_DESKTOP desk top, you have to turn the device off and on.

With the button  you change to the trend mask.

Before you navigate the data points back and fore with the bar navigate

 the device has only a few data are recorded. In the default storage time of 30 s, this may take some

With the cursor bar






a cursor can be displayed.

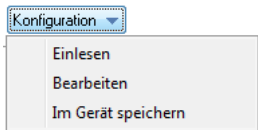


2.2.2 Input and output of the programming

In this section we want to discuss items for the processing of inputs and outputs.

Open the  Project management and select the project, Then it appears with the new icon  the known object selection dialog, select  Datenpunkt again.

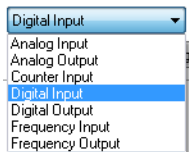
Anschließend konfigurieren wir unsere gewünschte Busstruktur. Sie können mit Then you set the desired bus structure. You can with




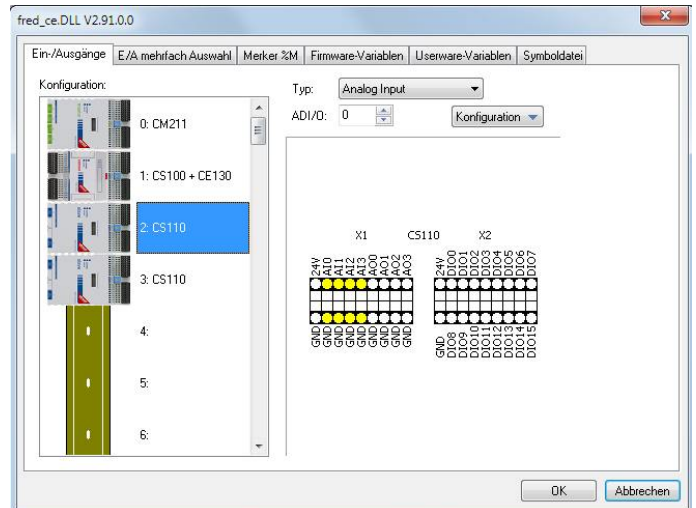
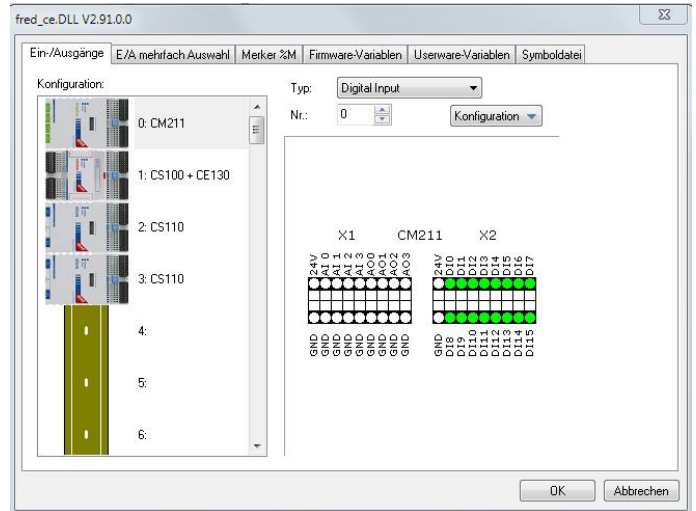
”

Edit "the configuration manual, without being connected to a device. Or, select "Read" and can the current configuration can be read automatically.

Then select the desired type from the input or output:




Only the master and slaves will be offered with  “selectable”: for example this type has an analog input.



If you want to create many inputs and outputs, the tab folder offers "I / O multiple choice", here you can select large quantities easily, but the syntax checking is disabled and you have to check your selection carefully.

For this example:

- 4 x Analog Input
- 4 x Analog Output
- 4 x Digital Input
- 4 x Digital Output

will be created. These data points will acally appeared automatically in the  project management and can be used immediately in the ElaDesign and / or CoDeSys programming

- CM211_ED_Analog_Input_00_00
- CM211_ED_Analog_Input_00_01
- CM211_ED_Analog_Input_00_02
- CM211_ED_Analog_Input_00_03
- CM211_ED_Analog_Output_00_00
- CM211_ED_Analog_Output_00_01
- CM211_ED_Analog_Output_00_02
- CM211_ED_Analog_Output_00_03
- CM211_ED_Digital_Input_00_00
- CM211_ED_Digital_Input_00_01
- CM211_ED_Digital_Input_00_02
- CM211_ED_Digital_Input_00_03
- CM211_ED_Digital_Output_00_00
- CM211_ED_Digital_Output_00_01
- CM211_ED_Digital_Output_00_02
- CM211_ED_Digital_Output_00_03



Analog and frequency inputs and outputs are configurable with the software Therefore, you have to configure this accordingly in CoDeSys with the aid of the library IO01.lib







ST


```
PROGRAM PLC_PRG
VAR
    ..
    bInit: BOOL := FALSE;
    i: BYTE;
END_VAR
IF NOT bInit THEN
    FOR i:=0 TO 3 DO
        bInit := IOConfigureAIN(0(*nSlaveNo*), i, AIN_0_10VOLT_NORMED (*nSensorType*));
        bInit := IOConfigureAOUT(0(*nSlaveNo*), i, AOUT_0_10VOLT_NORMED(*nSensorType*));
        bInit := IOConfigureFIN(0(*nSlaveNo*), i, FIN_COUNTER_INPUT(*nSensorType*));
    END_FOR
END_IF
```



With the telnet command "analog 1" may check the current configuration of the analog inputs and outputs.

```
Telnet 192.168.5.216
--- analog : show all channels ---
CM211_TU 2.19-9 May 30 2012 15:07:17 HW1.0
Device Temp: 0 C (max. 2 C)
-----
analog inputs:
channel 0:AIN_PT100_2WIRE : 9990.000 calibrationf 1380, 27001
channel 1:AIN_PT100_2WIRE : 9990.000 calibrationf 1380, 27001
channel 2:AIN_PT100_2WIRE : 9990.000 calibrationf 1380, 27001
channel 3:AIN_PT100_2WIRE : 9990.000 calibrationf 1380, 27001
-----
analog outputs: <n>,<p> change channel, <+>,<-> change value
channel 0:[*] 0..100 : 0.00
channel 1:[ ] 0..100 : 0.00
channel 2:[ ] 0..100 : 0.00
channel 3:[ ] 0..100 : 0.00
-----
```

Change the  project management. With  to the mask „PLC_VISU“then the designer masks will be opened. Choose in the tool bar the element „button“  and with  you can position the element in the drawing picture.

With  on the element, you will get in the dialog "Button"

There you select as a data point:

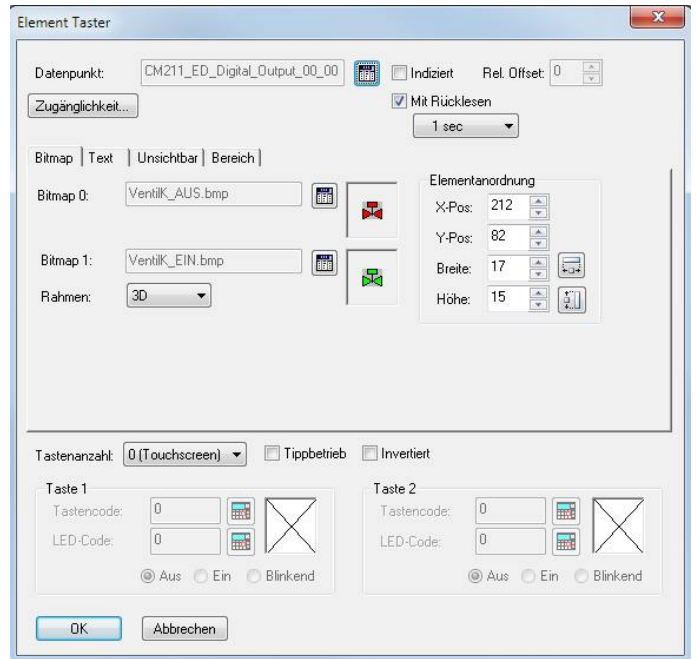
[CM211_ED_Digital_Output_00_00](#)



as a bitmap 0 from the gallery → ventilis


[VentilK_AUS.bmp](#)

And as bitmap 1 :

[VentilK_EIN.bmp](#)



Choose in the tool bar the element „picture“  and with  in the drawing window, you can place this element.


With  on the element you get in the dialogue „button“

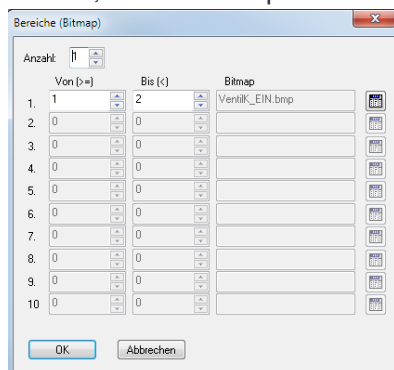
There you select as datapoint::


[Ventil_AUS.bmp](#)

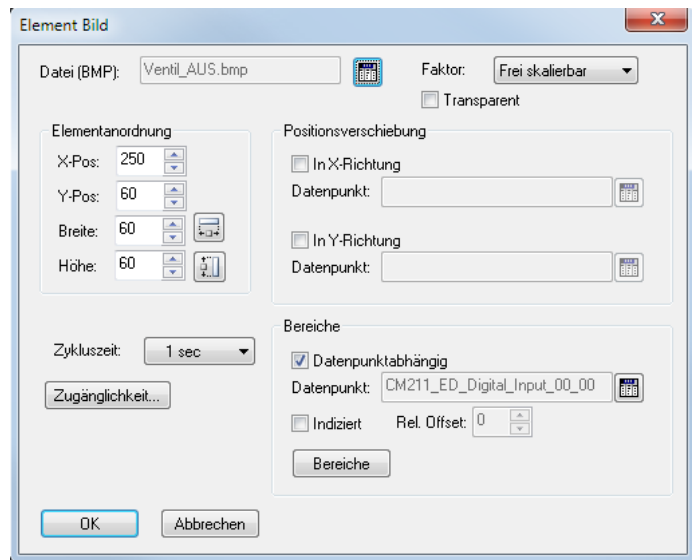
Activate Datenpunktabhängig and chose the desired digital Input.

[CM211_ED_Digital_Input_00_00](#)

With  You can select for different ranges of values, select bitmaps

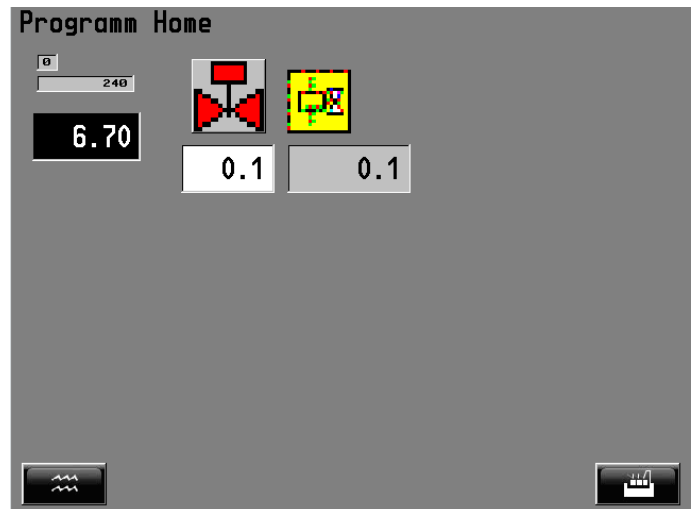


After you have finished with  the dialogue, the element is configured



Abschließend können Sie mit einem Anzeigefeld die analogen Eingänge sichtbar machen und mit einem Eingabefeld die analogen Ausgänge vorwählen. Finally, you can visualize the analog inputs and with a display preselect the analog outputs.

In MS Internet Explorer, see the following result.



2.2.3 Completion of the program

In addition to these simple data logger example, we can offer further examples of application:

- Automatic Control of temperatures, pressures, and many more
- Recipe Management
- Remote Maintenance
- and much more.






Now arrived at the destination, I congratulate you on your first successful project with eStudio.

I hope we have aroused your interest in this programming tool and we look forward to be able to welcome elrest

2.3 CoDeSys mit Target-Visu (TV)

2.3.1 Target Visualisierung Teil der Programmierung

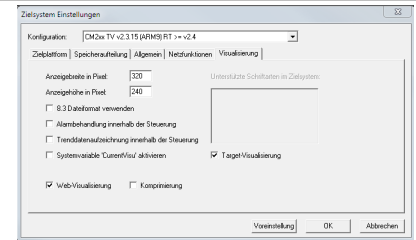
With online → Log out, switch to edit mode

Change to the tab folder , with  on 

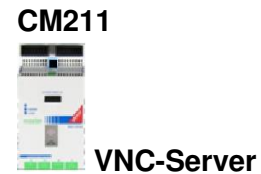
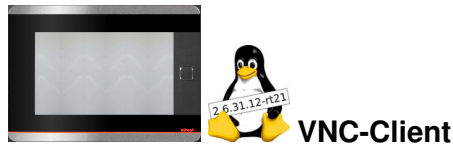
Change to the tab folder  and you can activate the options

Target-Visualisierung or Web-Visualisierung

In addition, even Alarmbehandlung innerhalb der Steuerung and Trenddatenaufzeichnung innerhalb der Steuerung can be activated.



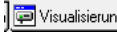
The option Target-Visualisierung is intended for the combination VNC client / server




The option Web-Visualisierung is intended for the combination Web Client / Server





Both options enable means a significant performance penalty

Change to the tab folder .

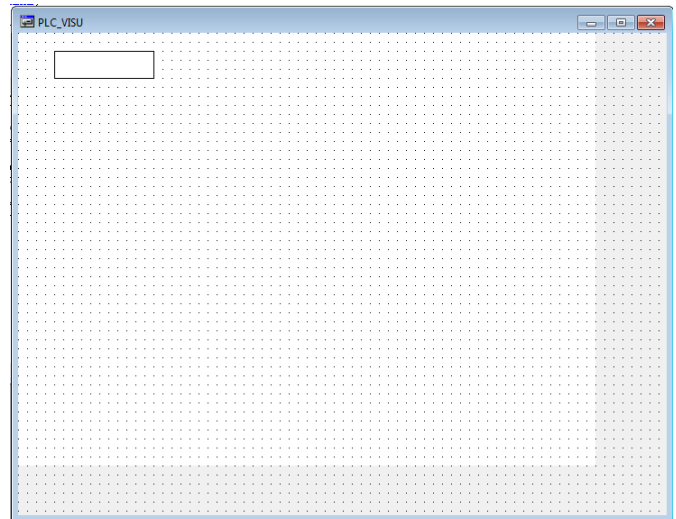
Select visualizations and with  and „insert object“ you can create a visualizations mask named „PLC_VISU“

It appears blank drawing window where you can insert your elements.

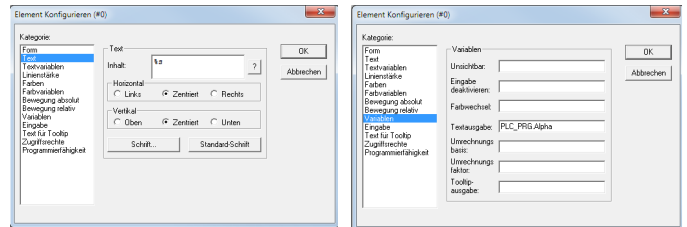
Select the Rectangle element  in the drawing

window and draw a rectangle the size you want With  the element you enter the configuration

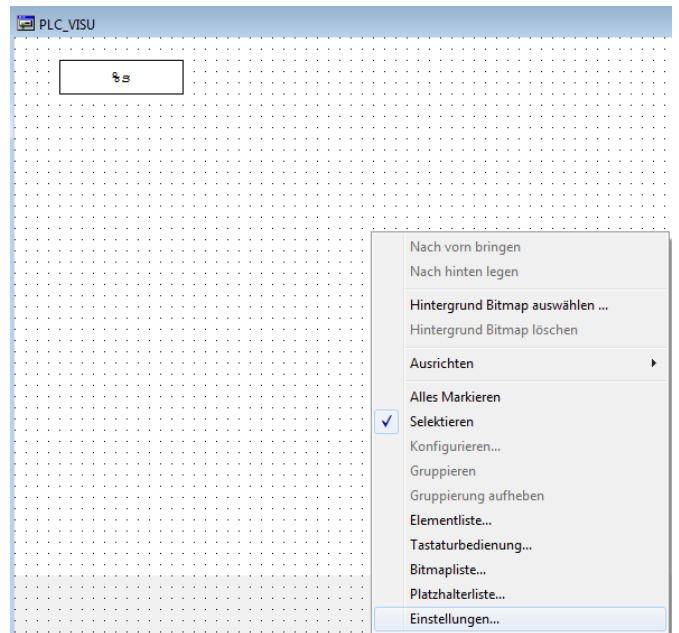
dialog for the element.



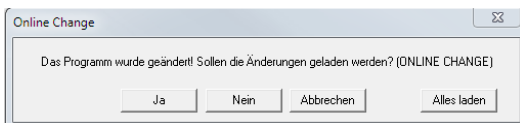
To illustrate the value of a variable, just in text
 →Content: "% s" have to be entered and then selected the corresponding variables




With the empty drawing area and in settings the category framework the Auto-Scrolling and the Online automatisch anpassen have to be deactivated, so you can get a 1:1 pixel-accurate representation

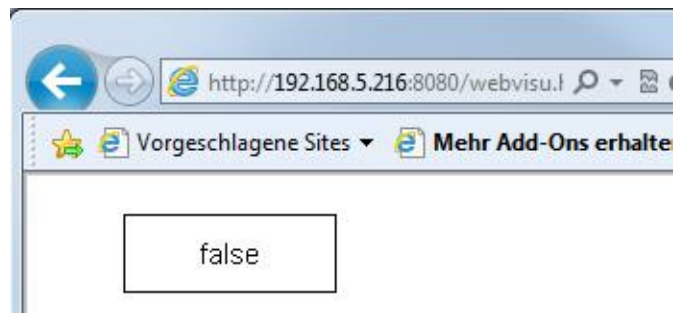
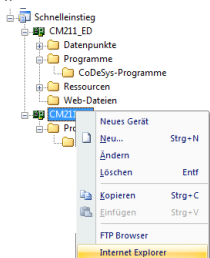


Mit „Onlineinloggen“ wird das erstellte Programm downloaden, es erscheint die Meldung
 With "Online Login" the created program will be downloaded it, displays the message



With it is loaded completely and finally „Online→Start“."online

Change to the project management  and with „select device“




You can open the internet browser.



Tipp If you prefer to use Firefox, Chrome, Opera or Safari, this goes well.
 The ElaDesign web solution only works on the MS Explorer


With „Online→log out“ the drawing mode can be changed..

Copy on the mask "PLC_VISU" the created element twice. With  the element you enter the configuration dialog and change the " variables → text output" on :

PLC_PRG.VarB

and

PLC_PRG.VarC


Select visualizations and with  and "insert object" you can create a visualization mask named "TREND"
It appears blank drawing window where you can insert your elements.

In the drawing window, the button element  will be complemented and drag it to a rectangle.

With  on the element you enter the configuration dialog and choose from „Bitmap → Bitmap the following bitmap:

c: \ program files \ elasoft \ gallery \ buttons \ feet_home.jpg and then under entry → zooming to Vis" the mask:

PLC_VISU



We copy the button element on the screen "PLC_VISU". With  on the element you enter in the configuration dialog and choose from: "Bitmap bitmap following bitmap:

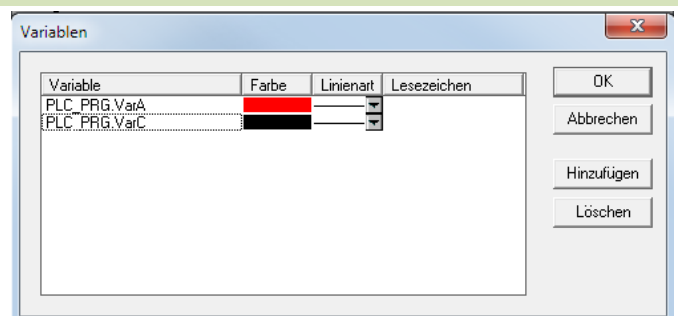
c: \ program files \ elasoft \ gallery \ buttons \ feet_trend.jpg and then under ". Entry → zooming to Vis" the mask

TREND

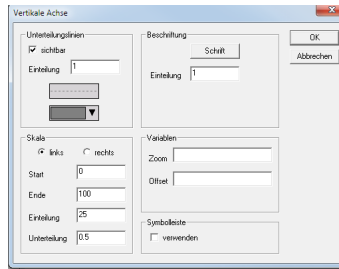


Never work with absolute paths, because otherwise your project will not run on other computers. Copy before the image files into your project directory.

We add to the Mask "Trend" the item Trend  and drag it to a rectangle and enter in the configuration dialog. Select under "Trend →  from the following variables



Choose in „Trend→ Vertikale Achse“: the following Settings




Mit „Online→Log in“ the created program is loaded again

2.3.2 Input and output portion of the programming

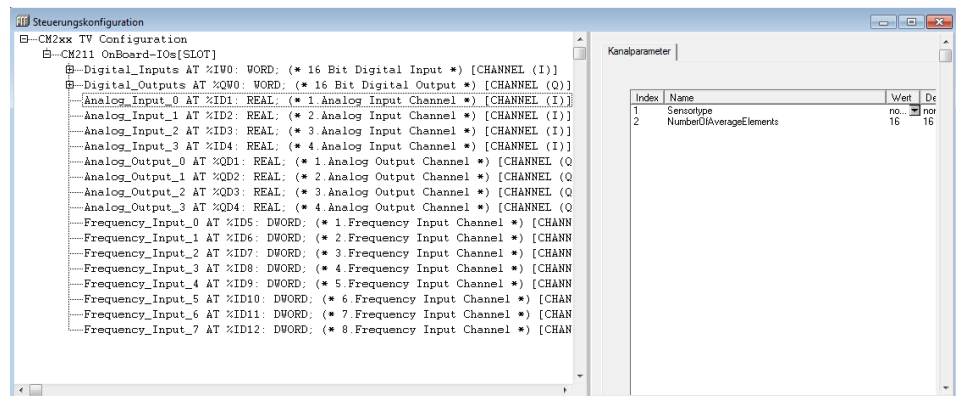
In this section we want to discuss items for the processing of inputs and outputs

Change to the tab folder.

Click on **Ressourcen**, with  on **Steuerungskonfiguration** open the Control configuration

Here you can each and all

- Digital
- Analoge
- Frequency

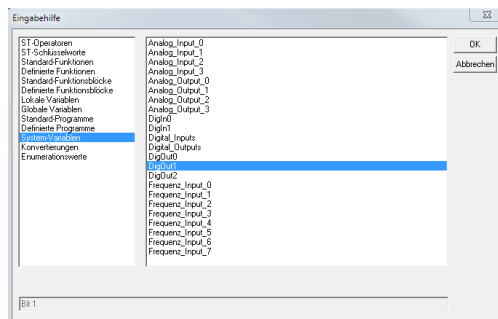


Inputs and outputs configure and assign CoDeSys variables

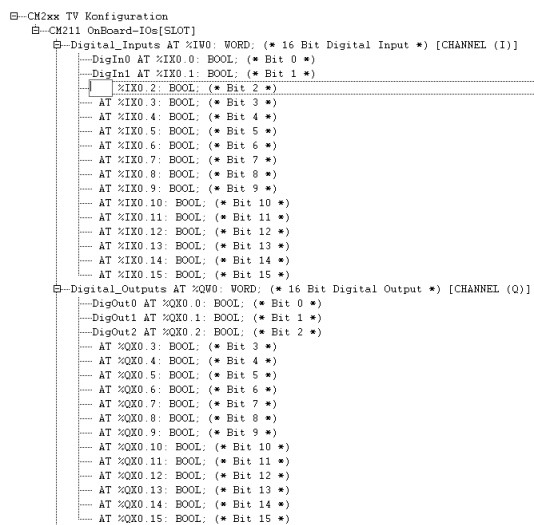
2.3.2.1 Digital inputs and output

Enter in the desired location eg %IX0.2 up a self-explanatory name for this input.

Then comes <F2> under the command Help:





where you can select your defined inputs and outputs at any point code.



2.3.2.2 Analog inputs and outputs

In the case of analog inputs and outputs must be configured each channel used by the sensor type.

We add to the mask "PLC_VISU" the element rectangle  and drag in the drawing window a rectangle to the desired size.

With  on the element you enter in the configuration dialog for the element

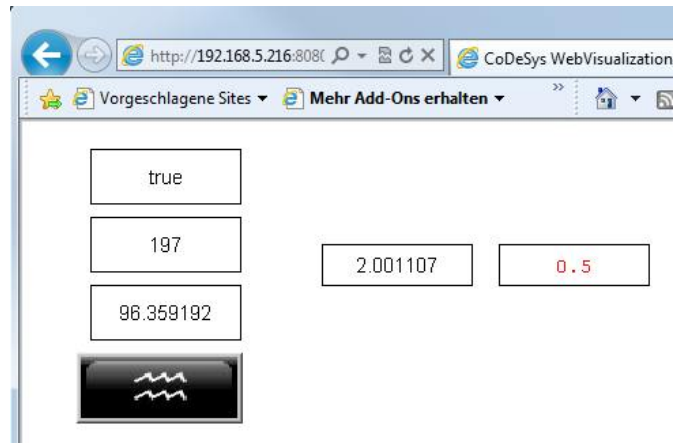
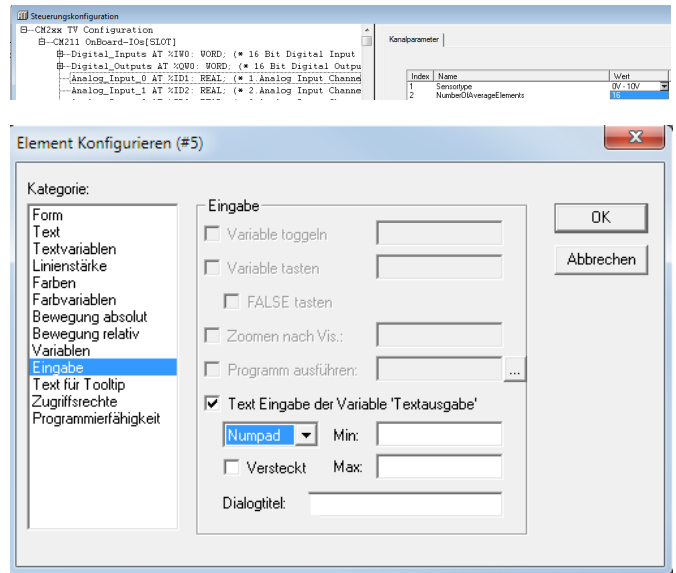
Select as the variable: [Analog_Output_0](#)

And set as enter Text Eingabe der Variable 'Textausgabe' with numpad.

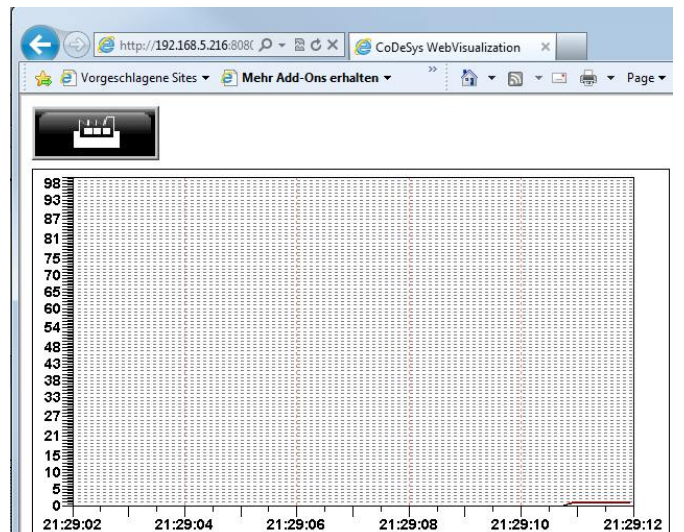
Repeat the process for the variable [Analog_Input_0](#):

With „Online→log- in“.the created program is loaded again, and then start

In the Internet Explorer the following picture:should be appeared



Press the button  and the display will change to the following picture



2.3.3 *Completion of the program*

Neben diese einfachen Trend Beispiel können wir Ihnen weitere Applikationsbeispiele anbieten für: Apart from this simple trend as we can offer further examples of application:

- Automatic Control of temperatures, pressures, and many more
- Recipe Management
- and so on




Now arrived at the destination, I congratulate you on your first successful project with eStudio.

I hope we have aroused your interest in this programming tool and we look forward to welcoming you to elrest

3 Decision support ED versus TV

The following overview is intended to facilitate your decision for the correct visualization tool

	ED	TV
Multilingualism. Under ED, the text directly exported and imported to the project management as an Excel file in Unicode format. Under this CoDeSys is using a *. Vis file to be manually created and always	✓	✓
Unicode. Use of languages e such as Chinese, Arabic, etc	✓	✗
Customer specific or language-specific and Num Pad Alphanumeric's.	✓	✗
		
Recipes define, load, save.	✓	✗
menu structures	✓	✗
Pixel accurate representation identical between visualization and web visualization. In the JAVA WEB-solution behavior of the visualization is not always identical to the web visualization.	✓	✗
Replacement, Concept It can be copied and only the data points are modified by other projects masks	✗	✓
CoDeSys variables used It can be used with the help of the icon file in the CoDeSys variable duty cycle. This requires a bit more work.	✗	✓

4 Support

Hotline

For additional assistance or information, you can use our hotline at the following times

Mo-Fr: von 8.00- 12.00 und 13.00 - 16.30

Outside these hours, please contact us by e-mail at or fax:

Phone:++49 (0) 7021/92025-33

Fax: ++49 (0) 7021/92025-29

E-mail: hotline@elrest.de

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We offer training or project-based workshops elrest products.

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5 History

<i>Date</i>	<i>Name</i>	<i>Chapterl</i>	<i>Change</i>
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