User Manual

Galileo 5.3

Software

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Innovation in Automation

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Contents

1 Installation

1.1 Trademarks

Windows, Windows NT, Windows 2000 and Windows XP are registered trademarks of the Microsoft Corporation. All other trademarks and product names are trademarks of the proprietor concerned and are acknowledged.
For archiving and unpacking projects Galileo uses the libraries ZIP32.DLL and UNZIP32.DLL. These libraries are the property of the following persons: Mark Alder, Richard B. Wales, Jean-loup Gailly, Onno van der Linden, Kai Uwe Rommel, Igor Mandrichonko, John Bush and Paul Kienitz.
Portions of the imaging technology of this product are copyrighted by Accusoft Corporation.
In the event of a crash, Galileo uses the CRASHRPT.DLL library developed by Michael Carruth.

1.2 System requirements

Pentium

Windows NT: 64 MB RAM (128 MB recommended)
Windows 2000: 64 MB RAM (128 MB recommended)
Windows XP : 128 MB RAM (256 MB recommended)

VGA graphics card and color monitor with 640x480 resolution and 256 colors (800x600 resolution recommended)

at least 100 MB free hard disk memory

Flash card slot (recommended)

1.3 Installing Galileo

Important: Deactivate all anti-virus programs before running the Galileo setup program since this could impair the installation. Also close all open applications before starting the installation.

Observe the following procedure to install Galileo under Windows NT 4.0, 2000 or Windows XP:

1. Insert diskette 1 or the CD in the corresponding drive.
2. Click the Start button, then select Settings and then Control Panel.
3. Double-click Add/Remove Programs.
4. Click Install/Uninstall in the registration card and then Install.
5. Start the program Setup.exe on the CD.
6. Follow the instructions on the screen.

Galileo will also show version information the first time it is started.

See also Environment Settings, Release Notes

Note:

Galileo will install as a DEMO version if no valid serial number is entered during installation. The DEMO version has the following restrictions:

- The Galileo start menu outputs the message DEMO version.
- The message DEMO Mode will appear when the GRS runtime program is started.
- The GRS runtime program will abort after 60 minutes and the message DEMO Mode will appear. The device must be restarted.

1.4 Installing the PC Card Drive

The units with a Flash drive support ATA FLASH PC cards. LINEAR FLASH PC cards are not supported.

Refer to the documentation of the drive manufacturers and Windows® on how to install a Flash card drive.

Windows NT does not support the removal of Flash cards while the computer is running. The removal of Flash cards, even with computers running on Windows NT, can be supported through the use of additional programs (e.g. "Cardware NT from Award" or the Image Card Reader Flash card drive from Datafab Systems Inc.").

1.5 Serial cable

This cable is used for the printer.

The serial connection cable must have the following pin assignments, or you can use a 'null modem cable':

MMI		**Galileo PC**	**Galileo PC**
9pole (F)		**9pole (F)**	**25pole (F)**
3 (TxD)	→	2 (RxD)	3 (RxD)
2 (RxD)	←	3 (TxD)	2 (TxD)
4 (DTR)	→	6 (DSR)	6 (DSR)
5 (GND)		5 (GND)	7 (GND)
6 (DSR)	←	4 (DTR)	20 (DTR)

See also Printer Functions and Print options (Overview)

2 Limits of Galileo

2.1 Project-related limit values

Max. number of masks per project	:	65'000
Max. number of languages per project	:	100
Supported character sets (1)		
• Roman	:	Yes
• Cyrillic	:	Yes
• Greek	:	Yes
• Hebrew	:	Yes
• Hiragana/Katakana	:	Yes
#• 3ChineseOþ		
#• ;JapaneseOþ		
#• +KoreanOþ		
#• +TaiwanOþ		
#• 3TurkishOþ		
• Central European		Yes
Max. number of error messages in the display	:	1'000
Max. number of error messages in the history	:	4'096
Max. number of communication interfaces		8
Max. data block size	:	128 Bytes
Max. number of tags (Bit, Byte, Word, Double Word, Float, Error Bit)	:	65'000
• Tag format: Binary, Decimal, Decimal +/-, Hexadecimal, Octal, BCD	:	Yes
Selectable value conversion (max. 10 groups)	:	Yes
Scripts		
Maximum number of compiled loop scripts (all loop scripts)	:	Depending on device
Maximum number of compiled script lines of an event script	:	Depending on device
Password management:		
• Max. number of user levels	:	200
• Max. number of users	:	500
• Max. user name length	:	20
• Max. password length	:	20

(The number of available character sets is being continuously expanded

1) (2) This number of communication interfaces is only available if a printer is not connected to the MMI. The use of a printer means that one less communication interface is available.

Recipe management:

Max. number of recipes objects	: 32
Max. recipe file size for units with Flash card (3)	: 5 MBytes
Max. recipe file size for units without Flash card (3)	: 2 MBytes
Max. number of recipe entries (data records) (3)	: 1000
Max. number of tags (3)	: 2000

Graphs:

Max. number of graph blocks	: 100
Max. number of tags per graph	: 32
Smallest scan rates	: 1 second
Max. number of measured values (Standard mode of graph block)	: Mask width in pixels
Max. number of measured values (Standard mode of graph block)	: RAM memory size in number of bytes (4)
Max. number of archive files (5)	: 100

3 Calculation of the file size of a recipe management in number of bytes: See Info

4 The maximum number of measured values primarily depends on the RAM memory required. The size of the RAM memory depends on the device type and device configuration concerned. The amount of RAM memory available for graph blocks is determined by the size of the project, the texts, recipes, mask files and mask size.
The RAM memory (in number of bytes) required for each graph block is calculated as follows:
RAM memory = (22 + Number of measured values * (8 + Number of curves * 4)

5 The memory required for the archive files must be ensured.

2.2

2.3 Mask-related limit values

Max. number of static or dynamic objects per mask	:	4096
Max. number of overlapping dynamic objects per mask[6]	:	256
Max. number of error window objects per mask	:	1
Max. number of Help window objects per mask	:	1

[6] This limit does not apply to Printing Report masks.

3 Introduction

3.1 Using this Documentation

This manual will provide you with a fast and effective introduction to the GALILEO design software from Micro Innovation AG.

The chapter Procedure for creating a new project describes how to create a project.

When the cursor is positioned on a control element in the design software, information about the dialog can be obtained by pressing F1.

3.2 Program Structure

3.2.1 Program Structure

GALILEO's program window consists of a main menu with every project mask being loaded in a subordinate window. Any number of masks can be opened at the same time.

3.2.2 Program Start With Parameters

The program can be started with the following optional parameters.

/LAST
Automatically loads the last loaded project and the last opened masks.

/NOLOGO
Suppresses the display of the start logo

3.2.3 Menu Points

Some menu points are also accessible by means of shortcuts. In this case the shortcuts available are shown on the right of the menu point concerned. The following table does not show the shortcuts available.

The program has the following menu structure:

Menu name	Menu point	Brief description or relevant section of manual
Project	New...	Creating a new project
	Open...	Open Project
	Close	Close Project
	Save	Save Project
	Save As...	Save Project As...
	Backup...	Project Backup
	Backup and Send…	Project Backup and Send
	Restore...	Project Restore
	List of last projects opened	Standard Windows ® function
	Info...	Project Information
	Project Report...	Project Report

	Exit	Standard Windows ® function
Edit	Undo	Undo
	Redo	Redo
	Cut	Standard Windows ® function
	Copy	Standard Windows ® function
	Paste	Standard Windows ® function
	Delete	Standard Windows ® function
	Select All	Standard Windows ® function
	Deselect All	Standard Windows ® function
	Properties...	Properties of static objects and General
	Search...	Search for objects and tags
	Search Replace	Global Search Replace of settings
View	Status Bar	Status Bar On/Off
	Standard Toolbar	Standard Toolbar On/Off (see also Toolbar "Standard")
	Objects Toolbar	Objects Toolbar On/Off (see also Toolbar "Objects")
	Drawing Toolbar	Drawing Toolbar On/Off (see also Toolbar "Draw")
	Project Overview	Project Overview Toolbar On/Off (see also Toolbar "Project Overview")
	Object Type	Displaying object types
	PLC Address / Info	Displaying the PLC address / info
	Tag Name/ Info	Displaying the Tag Name / Info
	Help Window	Help Window visible or transparent display
	No Help Lines	Help lines on/off (see also No Help Lines)
	Previous Page	Moves to the previous page (only possible with Printer Report type masks consisting of several pages) See also Edit
	Next Page	Moves to the next page (only possible with Printer Report type masks consisting of several pages) See also Edit
	Redraw	Redraw mask

Draw	Select	Select an object
	Area Select	Select an area
	Line	Properties of static objects
	Rectangle	Properties of static objects
	Rounded Rectangle	Properties of static objects
	Ellipse	Properties of static objects
	Polygon	Properties of static objects
	Text	Properties of static objects
	Bitmap	Properties of static objects
	Align to Left	Align all selected objects to left
	Align to Right	Align all selected objects to right
	Align to Top	Align all selected objects to top
	Align to Bottom	Align all selected objects to bottom
	Same Width	Align all selected objects to the same width (set by the last object marked)
	Same Height	Align all selected objects to the same height (set by the last object marked)
	Move to Front	Move selected object to the front
	Move to Back	Move selected object to the back
	Move Forward	Move selected object in front of next object
	Move Backward	Move selected object behind the next object
	Fix	Fix the selected object at the current position
	Group	Combines the selected objects into a group (see also chapter Group)
	Ungroup	Breaks up the selected group (see also chapter Group)
Objects	MaskChange	Mask Change
	Button	Button
/)^?)^		
	Flag Display	Flag Display
	Value Entry / Display	Value Entry / Display
	Bargraph	Bargraph
/h?h		

/¶?¶

	Slider	Slider
	Error Window	Error Window
	Function Key	Function Key
	PLC Text	PLC Text
	Time/Date	Time/Date
	Help Button	Help Button
	Help Window	Help Window
	Parameter List	Parameter List
	Sub Mask	Sub Mask
	Camera	Camera
Config	Panel Type…	Panel Type
	Select PLC…	Select PLC
	Define Text…	Define Text
	Define Help Text…	Define Text
	Define Error Text…	Define Text
	Notes…	Project Notes
	Settings…	Project Settings
	Languages…	General
	Password…	Password Settings
	Color Palette…	Color Palette
Extras	Options…	Options
Build	Optimize…	Optimize Projects
	Compile...	Compiler Level
	Clean…	Delete all compiled files except the recipe files.
	Download (Local/FTP)…	Download (Lokal/FTP)
	Upload Project…	Upload Project
	Upload Data…	Upload Data
	Start Galileo Project Inspector	Testing the project
Window	Cascade	Standard Windows ® function
	Tile	Standard Windows ® function

	Arrange Icons	Standard Windows ® function
	List of all open mask	Standard Windows ® function
Help	Topics	Start the Galileo Help system
	GRS Topics	Start the GRS Help system
	Micro Panel with Windows CE Topics	Start the program Acrobat Reader with the help file
	Release Notes	Shows information on the current version (see also Release Notes)
	OS Release Notes	Shows information on the current operating system version
	About Galileo...	About Galileo

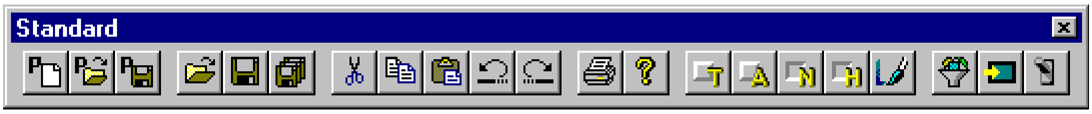
3.2.4 Toolbars

Toolbars

Frequently used menu points are also available via a toolbar. Position the mouse on any button in the toolbar. Leave the cursor positioned for a moment. The name or function of this button will be displayed.

The toolbars can be moved, enlarged or reduced as required.

Toolbar "Standard"



The "Standard" toolbar features the following functions:

- Creating a new project
- Open Project
- Save Project
- Creating new masks
- Open Mask
- Save Mask
- Save All Masks
- Cut
- Copy
- Paste

Undo

Redo

Project Report

Start Help

Display / Don't display object type (see also Displaying object types)

Display / Don't display PLC address (see also Displaying the PLC address / info)

Display / Don't display the Tag or Block name / Information of the object (see also Displaying the Tag Name / Info)

Draw Help window transparent or opaque see also Help Window)

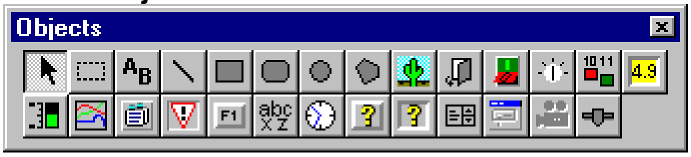
Redraw current mask

Compile project (see also Compiling)

Transfer project (see also Download (Flash card))

Test project directly on PC; Galileo Project Inspector (see also Testing the project)

Toolbar "Objects"



The "Objects" toolbar features the following functions:

Select objects (one or several objects) within a mask

Select several objects within the mask

Draw static object Text

Draw static object Line (see also Properties of static objects)

Draw static object Rectangle (see also Properties of static objects)

Draw static object Rounded rectangle (see also Properties of static objects)

Draw static object Ellipse (see also Properties of static objects)

Draw static object Polygon (see also Properties of static objects)

Draw static object Bitmap

Draw dynamic object Mask Change

Draw dynamic object Button

Draw dynamic object Switch

Draw dynamic object Flag Display

Draw dynamic object Value Entry / Display

Draw dynamic object Bargraph

Draw dynamic object Graph

Draw dynamic object Recipe

Draw dynamic object Error Window

Draw dynamic object Function Key

Draw dynamic object PLC Text

Draw dynamic object Time/Date

Draw dynamic object Help Button

Draw dynamic object Help Window

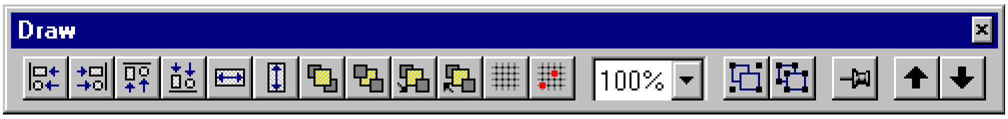
Draw dynamic object Parameter List

Draw dynamic object Sub Mask

Draw dynamic object Camera

Draw dynamic object Slider

Toolbar "Draw"



The Toolbar "Draw" features the following functions:

1 Align all selected objects to the object at the far left.

1 Align all selected objects to the object at the far right.

1 Align all selected objects to the object at the top.

1 Align all selected objects to the object at the bottom.

1 Set all selected objects to the same width as the last selected object.

1 Set all selected objects to the same height as the last selected object.

2 Move the object to the front of all other objects.

2 Move the object to the back of all other objects.

2 Move the object one level to the front.

2 Move the object one level to the back.

Show or do not show the display grid.

Activate or deactivate the Snap Grid. If the Snap Grid is active, only cursor positions on this grid are active.

100% ▾ Enlarge or reduce the mask size.

Combines the selected objects into a group

Breaks up the selected group

Fix the selected object at the current position

Moves to the previous page (only possible with Printer Report type masks consisting of several pages)

See also Edit, Printing Report

Moves to the next page (only possible with Printer Report type masks consisting of several pages)

See also Edit, Printing Report

1 This function is only available if two or more objects have been selected beforehand.

2 This function is only available if only one object has been selected beforehand.

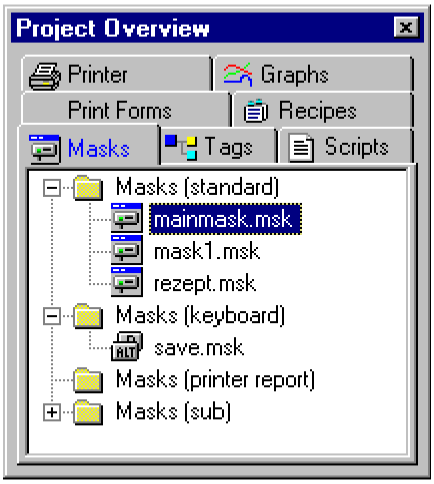
See also View Settings

Toolbar "Project Overview"

The groups, masks, tags, printers, print forms, graphs, recipes and scripts are contained in the project overview.

Mask Overview

Mask Overview

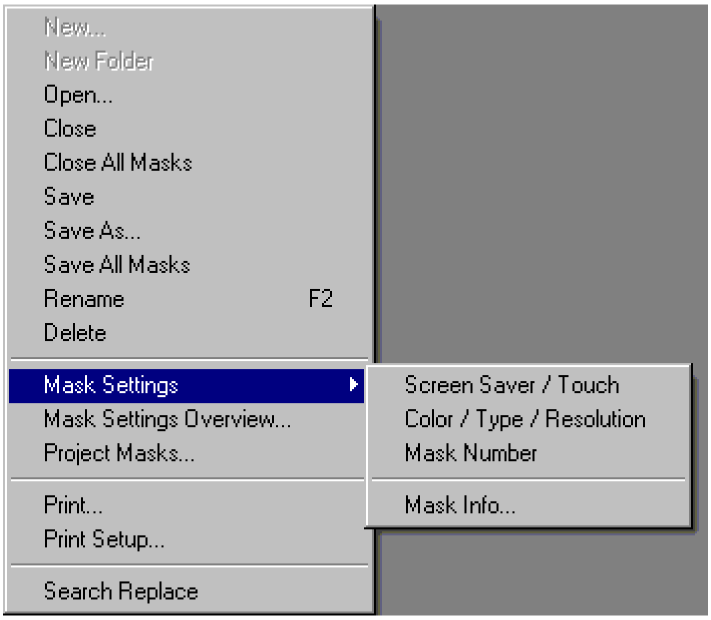


The Project Overview contains the lists Masks (standard), (keyboard), (printer report) and (sub), each containing the project masks of their particular type. See also Mask Settings, Edit.

Toolbar functions:

Double-click with the left mouse button	to open the mask file currently selected by the mouse
Click with the right mouse button	to call up the Context menu of the toolbar mask

Context menu of the toolbar mask

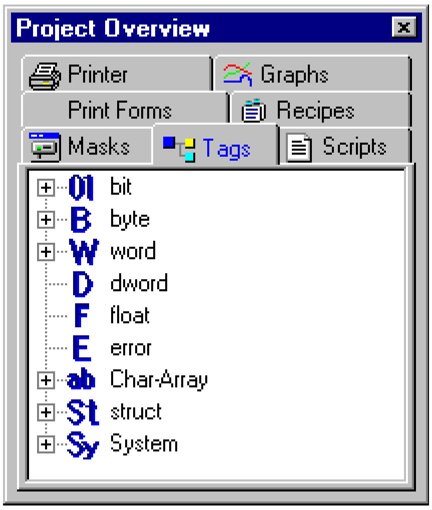


New...	Create new mask
New Folder	Create a new folder
Open...	Open a mask file
Close	Close a mask file
Close all Masks	Close all mask files
Save	Save a mask file
Save As...	Save a mask file with a new name
Save All Masks	Save all mask files
Rename	Rename mask
Delete	Delete a mask in the project and the mask file
Mask Settings...	Screen Saver/Touch Disable Color, Type, Resolution Mask Number Mask Info…
Mask Settings Overview...	Mask Settings
Project Masks...	Project Masks
Print...	Mask Printout
Print Setup...	Change printer settings
Search Replace	Search Replace attributes in the selected masks

This context menu can be used to open, close, save, delete and print masks.

Tag Overview

Tag Overview



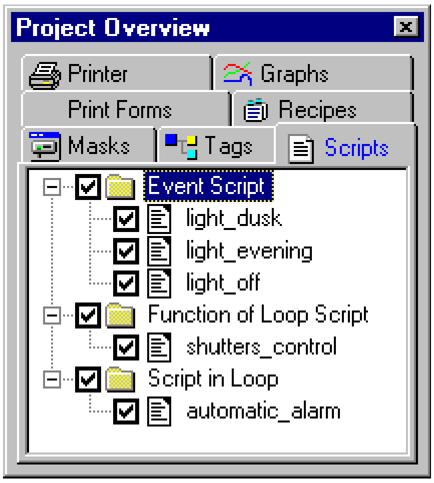
The tag group contains the Bit, Byte, Word, DWord, Float, Error, Char Array, Structure and System tag types. See also Definition of Tags.

Functions of the Toolbar:

Double click with the left mouse button:	to open the Properties dialog of the tag concerned
Right-click the mouse:	to call up the Tag Toolbar

Script Overview

Script Overview



The scripts group consists of loop scripts, event scripts and a subfunction of a loop script. See also Overview of Scripts.

Functions of the Toolbar:

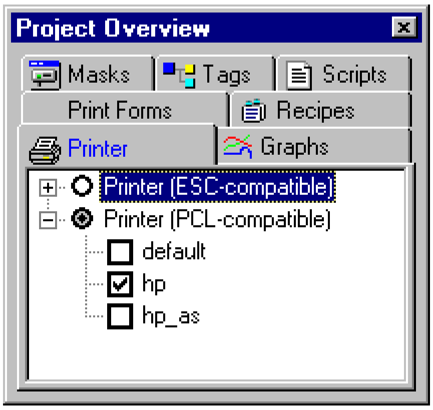
Double click with the left mouse	to call up the Script editor

button:

Right-click the mouse: to call up the Right Click Menu

Printer Overview

Printer Overview



The printer group consist of printer typs ESC- and PCL-compatible printers. See also Printer Settings.

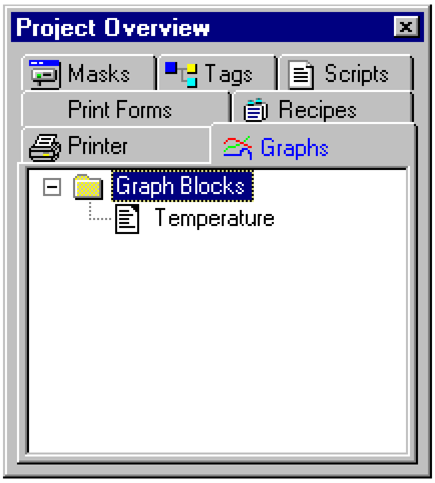
Functions of the Toolbar:

Double click with the left mouse button: to open the properties dialog of the printer concerned

Right-click the mouse: to call up the Context Menu

Graph Overview

Graph Overview



The graph group consist of graph blocks.

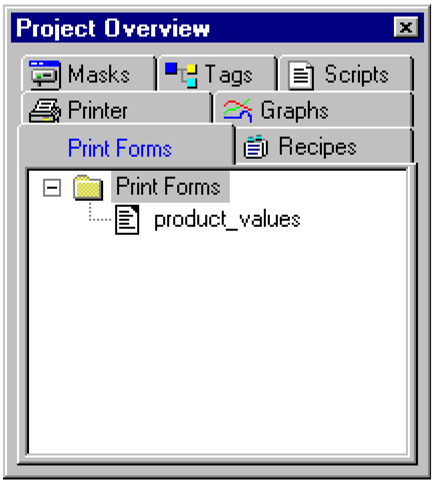
See also Graph Block.

Functions of the Toolbar:

Double click with the left mouse button:	to open the properties dialog of the graph block concerned
Right-click the mouse:	to call up the Context Menu

Printer Form Overview

Print From Overview



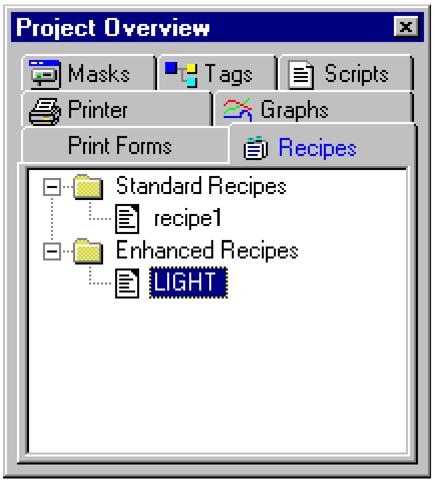
See also Printing From.

Functions of the Toolbar:

Double click with the left mouse button:	to open the properties dialog of the print form concerned
Right-click the mouse:	to call up the Context Menu

Recipe Overview

Recipe Overview



The recipe group consist of standard and enhanced recipes.

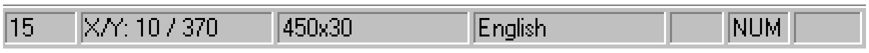
See also Recipe Management.

Functions of the Toolbar:

Double click with the left mouse button:	to open the properties dialog of the recipe concerned
Right-click the mouse:	to call up the Context Menu

3.2.5 Status bar

Status Bar



15 | X/Y: 10 / 370 | 450x30 | English | | NUM |

The Status bar provides different information such as:

Example:	Description
Ready	Indicates the current status and selected tool within a toolbar (see also Toolbars)
15	Number of selected objects
X: 140 Y: 110	Indicates the position of the selected object within the mask
200x90	Indicates the size of the selected object within the mask
English	Indicates the currently selected language (see also Actual shown Language)
NUM	Indicates the current status of the keys CAPS, NUM Lock and Scroll Lock

3.2.6 Windows

Windows

The program is divided up into several windows.

The main window shows the project and contains all the menu points and toolbars required.

For every mask that is created, a subordinate window (MDI window) is also opened.

3.2.7 Dialogs

Dialogs

Most dialogs must be closed by clicking OK, Cancel or Close buttons before the other elements of the program can be operated.

However, some dialogs (e.g. Compiler dialog) can be opened as a normal window in order to operate the rest of the program. This is useful when you want to see the contents of the window whilst operating the program.

The size of different dialogs can be changed and retained the next time Galileo is started (see also Enlarging and reducing dialogs).

3.2.8 Files and directories

Files and Directories

The following directory structure is created when Galileo is installed:

Program files\GALILEO\

BMP\	Pictures for design (picture library)
COMPONENT\	Tools of CE-Panel
DRIVER\	Communication driver files
FONTS\	Available fonts
RUNTIME\	Runtime and system programs for the MMI
OS\	Operating system of CE-panels
PLATFORM\	Original INI File for components of panels with the operating system CE.
PLC\	Files which can be used in conjunction with the PLC connection (e.g. GSD files for a Profibus DP link)
PRINTER\	Files for printer settings on MMI
SAMPLES\	Sample projects
SERVER\	Communication servers for different operating systems
TOOLS\	Utility programs that are used in conjunction with Galileo

The files in the directories FONTS, DRIVER, COMPONENT, SERVER, OS and RUNTIME must not be changed.

The following files are required for the basic settings of the software and should not be changed.

PlcSetup.cfg	Configuration file of the PLC and MMI definitions
Funcs.cfg	Configuration file of the fonts and special functions
Language.cfg	Configuration file of the translated languages
Ce_256.pgf	Standard color palette

The GALILEO design software and help files are copied to the GALILEO directory. Some DLL files are also copied to the Windows system directory.

3.3 Procedure for creating a new project

3.3.1 Procedure for creating a new project

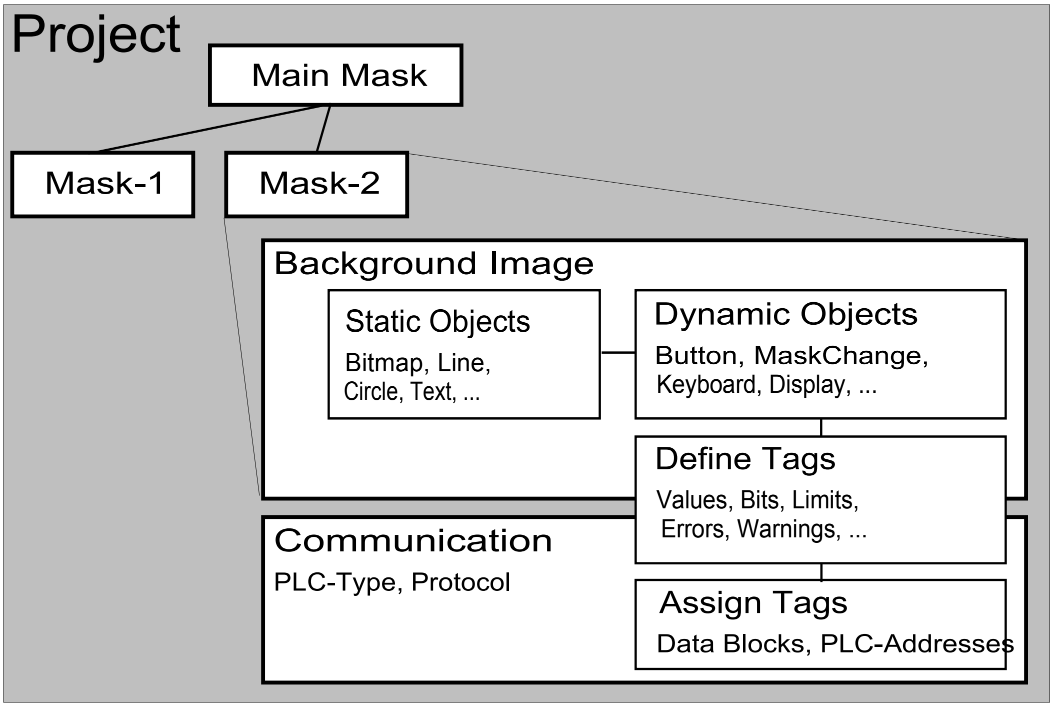
The following chapters describe how to create a project.

3.3.2 Preparations

Before starting your project make a few notes and sketches of the mask structure required and how the individual masks should look. Make a note of the following:

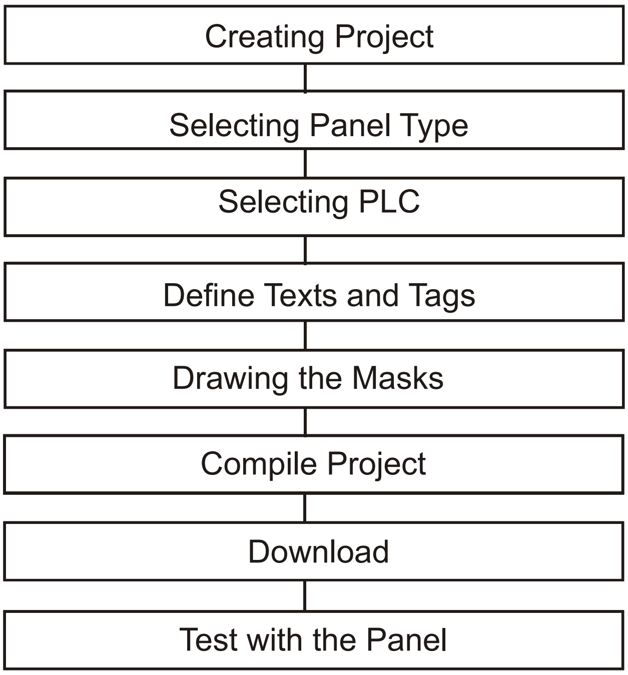
- The intended name of the project
- Which screen masks you require and the names they are to be assigned
- The interconnection between the individual screen masks
- The contents that each screen is to display
- The values to be displayed and their designations
- The PLC to be connected and the required protocol
- The locations for the data in the PLC

See the following example:



Pictures normally need to be provided as bitmap files. These pictures are only imported in GALILEO. They cannot be edited in the software itself. To modify a picture use a suitable drawing program (such as Windows Paint). It is not therefore important where the pictures used come from (scanner, drawing program, etc.).

3.3.3 Procedure Overview



This provides an overview showing the general procedure. The individual steps can be repeated as often as required, and it is also possible to change between steps as required. This overview serves simply as a design aid.

3.3.4 Program Settings

Program settings only need to be changed after the first startup of Galileo or when required. The settings are retentive irrespective of the project loaded.

The following settings can be selected via the "Options" menu point in the "Extras" menu:

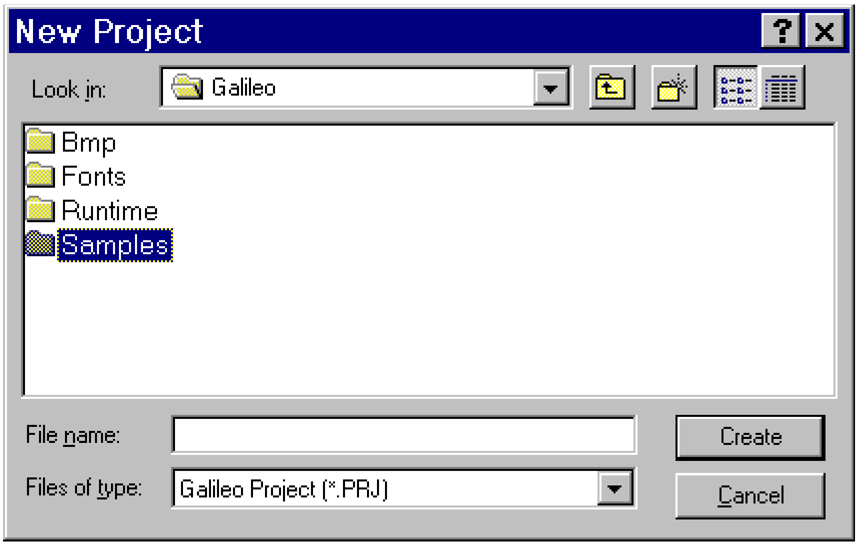
- Environment settings
- Standard directories
- Tools

See chapter Options for a more detailed description.

3.3.5 Designing a new project

Designing a New Project

A new project is generated by choosing menu point New in the Project menu. The project path for the new project can be set using the list box in the following dialog. Enter the required project name in the File Name entry box.

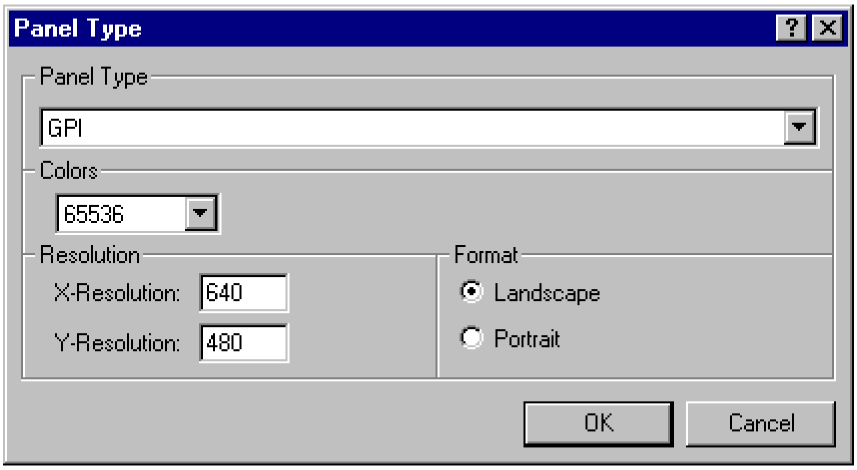


Selecting and Configuring the Panel Type

After defining the project name enter in the Panel Type dialog the type of MMI for which the project is to be used.

Panel Type	Description, Size
Colors	Number of colors for visualizing
Resolution	Resolution of the panel
Format	Format of the panel (landscape or portrait)

These settings can also be adjusted whilst the project is being designed. Changing to an MMI ("Panel Type") with a lower resolution, however, is not possible.



Panel Type: GPI

Colors: 65536

Resolution
X-Resolution: 640
Y-Resolution: 480

Format
● Landscape
○ Portrait

Configuring Project Parameters

Settings for the entire project.

- Error Window, 2D/3D Settings, Default Colors and Font, Touch, Enhanced Functions, System Messages, View Settings, System Keyboards, Mask Numbers and Compiler

See chapter Project Settings for a more detailed description

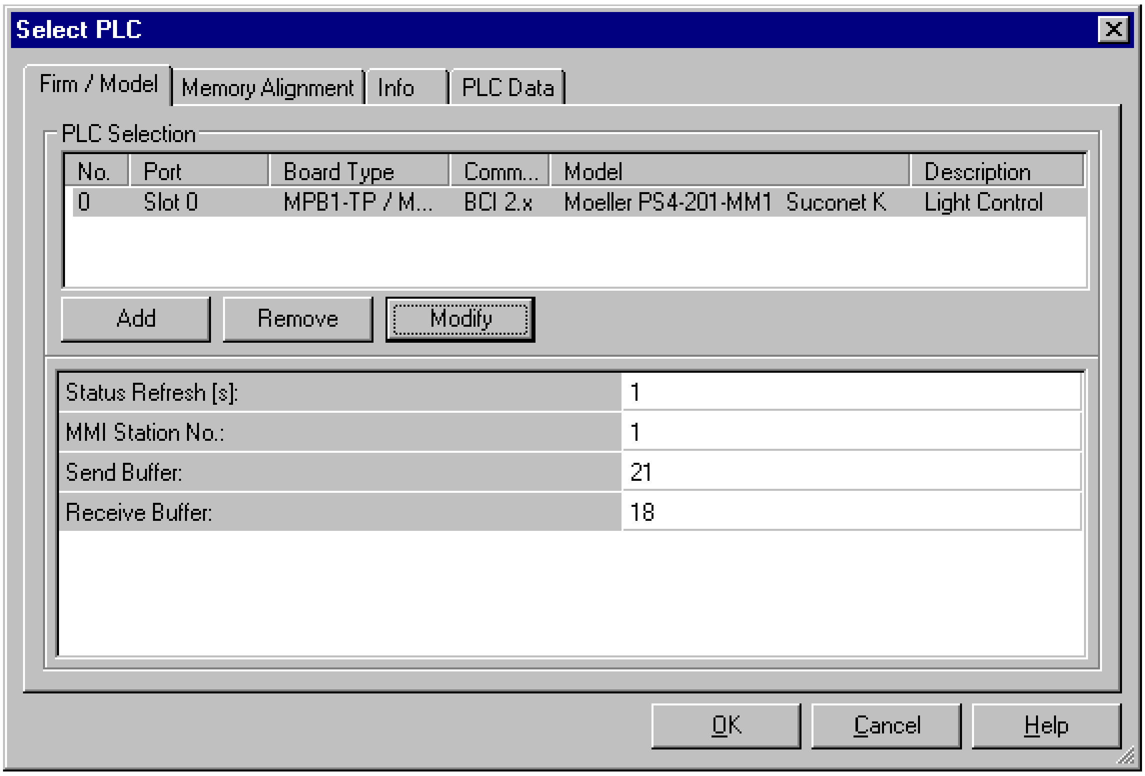
Entering Project Information

Each project is provided with a field in which notes, such as project journal or special notes, can be entered.

3.3.6 Select PLC

Select PLC

Selecting the PLCs to be connected to the MMI.



PLC Selection

No.	Port	Board Type	Comm...	Model	Description
0	Slot 0	MPB1-TP / M...	BCI 2.x	Moeller PS4-201-MM1 Suconet K	Light Control

Status Refresh [s]:	1
MMI Station No.:	1
Send Buffer:	21
Receive Buffer:	18

The "Info" and "PLC Data" panels provide different information on the selected PLC.

See also Selecting the PLC

3.3.7 Defining Tags

Defining Tags

All objects that read data from the PLC or write data to it are defined as tags. Tags of this kind can be selected when an object is configured. Tags are created in the Toolbar "Project Overview" of the tag group.

There are six types of tags - VALUE, BIT, ERROR, CHAR ARRAY, STRUCTURE and SYSTEM. VALUE tags also consist of four different types - BYTE, WORD, DWORD and FLOAT.

Value Tags

Value tags can be assigned the following parameters:

- Minimum, Maximum, Default value: the lower and upper limit of a value are used for the color change in the event that the actual value is out of the defined range. These values must be defined in the same way as they are defined in the PLC (without conversions)
- Number format decimal, signed decimal, hex, binary, octal or BCD
- Type of limit values

"Open":	The limit values cannot be adjusted and are preset to the maximum values (e.g. for WORD 0..65535)
"Constant":	The limit values can be defined as required.
"Dynamic":	The limit values are again tags of the same type that must have open or constant limit values ("Open" or "Constant").

- Unit
  Up to two units of measurement can be defined with separate conversion factors.
- A conversion factor is the factor used to convert the value directly on the PLC (PLC value) to the value to be displayed on the MMI (MMI value).

Bit tags

A bit tag is used to indicate or set a binary state. This can be for example a switch, a button or a light signal.

Only the default value (0 or 1) needs to be defined for a bit tag. This setting, however, is only of any meaning when the MMI is not connected to a PLC.

Error Tag

An Error tag is used to display error text in an Error window. Either an error text or a help text can be assigned an "error tag". The maximum length of these texts depends on the font size selected. Error texts cannot be longer than one line. Help texts, on the other hand, can take up several pages of the Help window. The number of characters that can be displayed depends on the font size selected.

Error texts in the Error window

All error texts that are defined for the Error window are shown by it. Use the cursor buttons to scroll up and down this list. Pressing the Help button ("Function key") to call up a Help text window on the currently displayed error.

See also "Updating the error display" in GRS.HLP.

Char-Array

A "Char Array Tag" is used for displaying in a mask modifiable texts that can be exchanged with the PLC. The text can be changed on the MMI and on the PLC.

Only the number of elements of "Char Array tags" have to be defined.

Struct

A structure is used for incorporating different tag types that are sent in the same Data Direction. The order in which tags are defined in a structure is also the order they are mapped in the address range of the PLC. The order within the structure can be changed by dragging and dropping the mouse accordingly.

No settings have to be made for a structure.

Addressing

A structure can be addressed directly. In this way all the tags within the structure can be addressed automatically and continuously.

However, each tag can also be addressed separately.

See also Address of Tags

System

The system tags CONTROL, DATE_TIME and STATUS are used for communication between the MMI and the PLC.

Only the size of the system tag has to be defined.

See also Control Block, Status Block

3.3.8 Defining Texts

Defining Texts

The texts of a project are divided into the three categories - Standard Text, Error Text and Help Text. Each text type is shown in a list.

The Standard texts are used for mask inscriptions and for objects. Error texts are used in the Error Window for displaying errors. Help texts are used in conjunction with the Help Button, Help Window and Parameter List objects for operator support.

3.3.9 Creating new masks

Creating New Masks

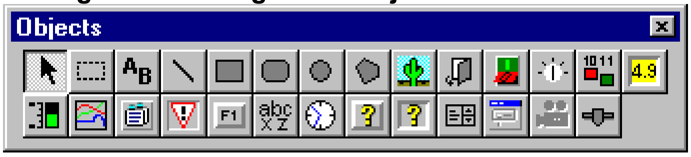
When a new mask is created, you are requested to enter a name. The name is then created and the screensaver and touch settings can be defined. The mask number can finally be defined for mask changes.

Configuring Mask

Different mask settings can be made such as screen savers, background color, etc..

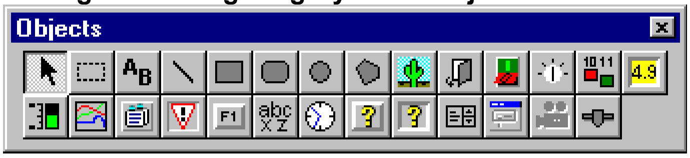
See also Mask Settings

Drawing and Inserting Static Objects



The "Draw" menu or the toolbar (3rd to 9th button) can be used for drawing static elements. These elements (e.g. circles, rectangle, bitmaps, ...) are static, i.e. their appearance or visibility does not change if the data in the PLC changes or if a manual operation is carried out on the MMI. These elements are always drawn before dynamic elements. A static element can therefore never overlap a dynamic element (see also Order of Objects)

Defining and Configuring Dynamic Objects



Dynamic objects are drawn using the Objects menu or via the tool bar (from 10th button). These elements (e.g. mask change, value entry / display, status display, button, ...) are dynamic. This means that their appearance or visibility changes when data changes in the PLC or in the event of a manual operation of the MMI. Different parameters can be defined for the object according to the type concerned.

Dynamic objects are always placed in front of static objects. In this way, a static element can never overlap a dynamic object (see also Order of Objects).

Arranging Objects

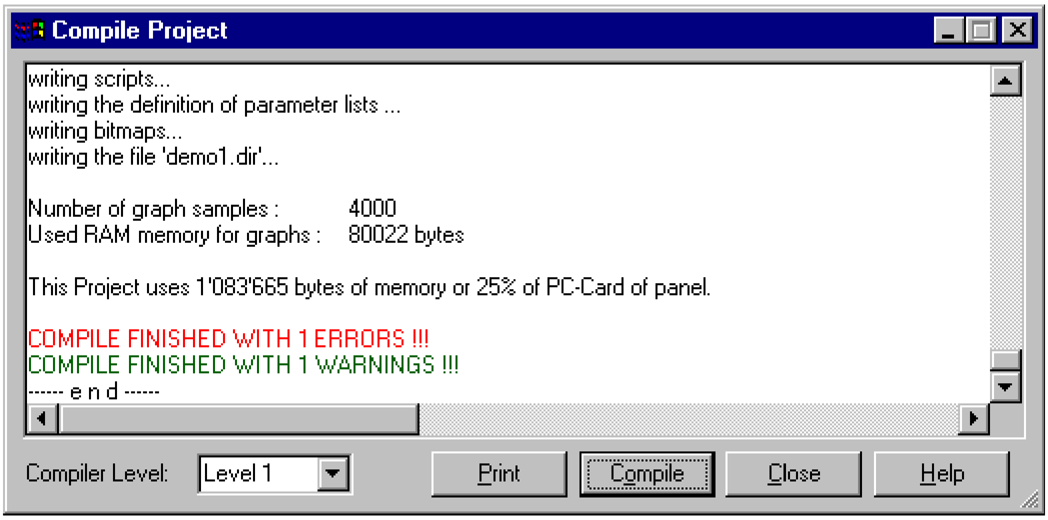
The objects can be positioned, enlarged or reduced as required using the mouse or the cursor keys.

See Toolbar "Draw"

3.3.10 Compile Project

Compile Project

The project must be compiled so that it can be run on the MMI (GRS).



```
writing scripts...
writing the definition of parameter lists ...
writing bitmaps...
writing the file 'demo1.dir'...

Number of graph samples :        4000
Used RAM memory for graphs :     80022 bytes

This Project uses 1'083'665 bytes of memory or 25% of PC-Card of panel.

COMPILE FINISHED WITH 1 ERRORS !!!
COMPILE FINISHED WITH 1 WARNINGS !!!
------ e n d ------
```

During the compiler run, the compiler displays all functions, errors and warnings as appropriate.

At the end of the compiler run a report is produced. If the compilation was completed successfully, the memory required on the Flash card is shown and the percentage of Flash card memory that is consequently used. If the compiler detects any errors, the number of errors detected is shown. In this case clicking the Show just Errors check box will allow the error messages concerned to be displayed.

This window does not have to be closed in order to rectify detected errors. Click the ▁ button to minimize the window so that the information contained in the list is not lost.

Tip:

A runtime code is generated even if errors are found. However, it is not advisable to use this runtime code on the MMI since the errors may cause unforeseeable malfunctions.

3.3.11 Test the project

Test the Project

The project can be tested directly on the PC using the GPI program. For this click 'Start Project Inspector' in the 'Build'.

Refer to chapter Testing the project for a more detailed description of the Galileo Project Inspectors.

3.3.12 Transferring a project

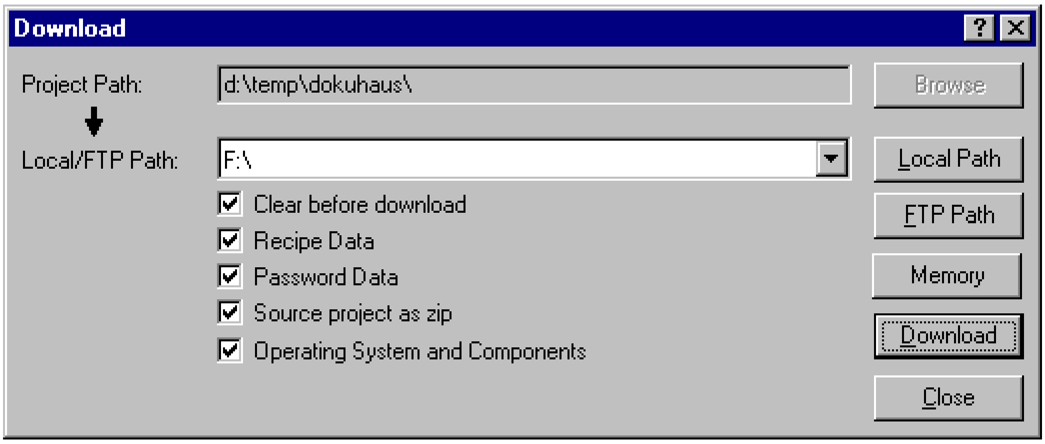
Transferring a Project

A project must be compiled for it to be used on the MMI. For this reason, a project always consists of a "source" and a "runtime code". The "runtime code" is required by the MMI, whilst the GALILEO design software uses the "source project".

Download / Upload

The Download and Upload functions are used to transfer a project either from the PC to the MMI or vice versa.

Download dialog for panels with Flash cards:



Project Path: d:\temp\dokuhaus\

Local/FTP Path: F:\

☑ Clear before download

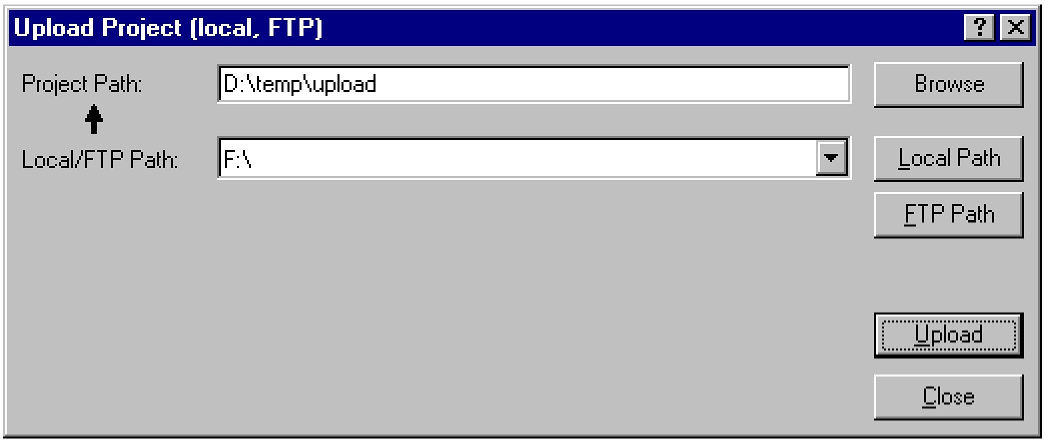
☑ Recipe Data

☑ Password Data

☑ Source project as zip

☑ Operating System and Components

Upload dialog for panels with Flash cards:



Project Path: D:\temp\upload

Local/FTP Path: F:\

Project Path

Directory in which the project is saved

Flash card Path

Directory in which the Flash card is located

Change

Change the current project path. Only the Flash card path can be set for a download.

Memory

Calculates the memory required for the project, including the RTS and excluding the OS.

Download
Click this button to start the download (data transfer from the PC to the MMI).

Upload
Click this button to start the upload (data transfer from the MMI to the PC). An upload is only possible if a source project is stored on the MMI.

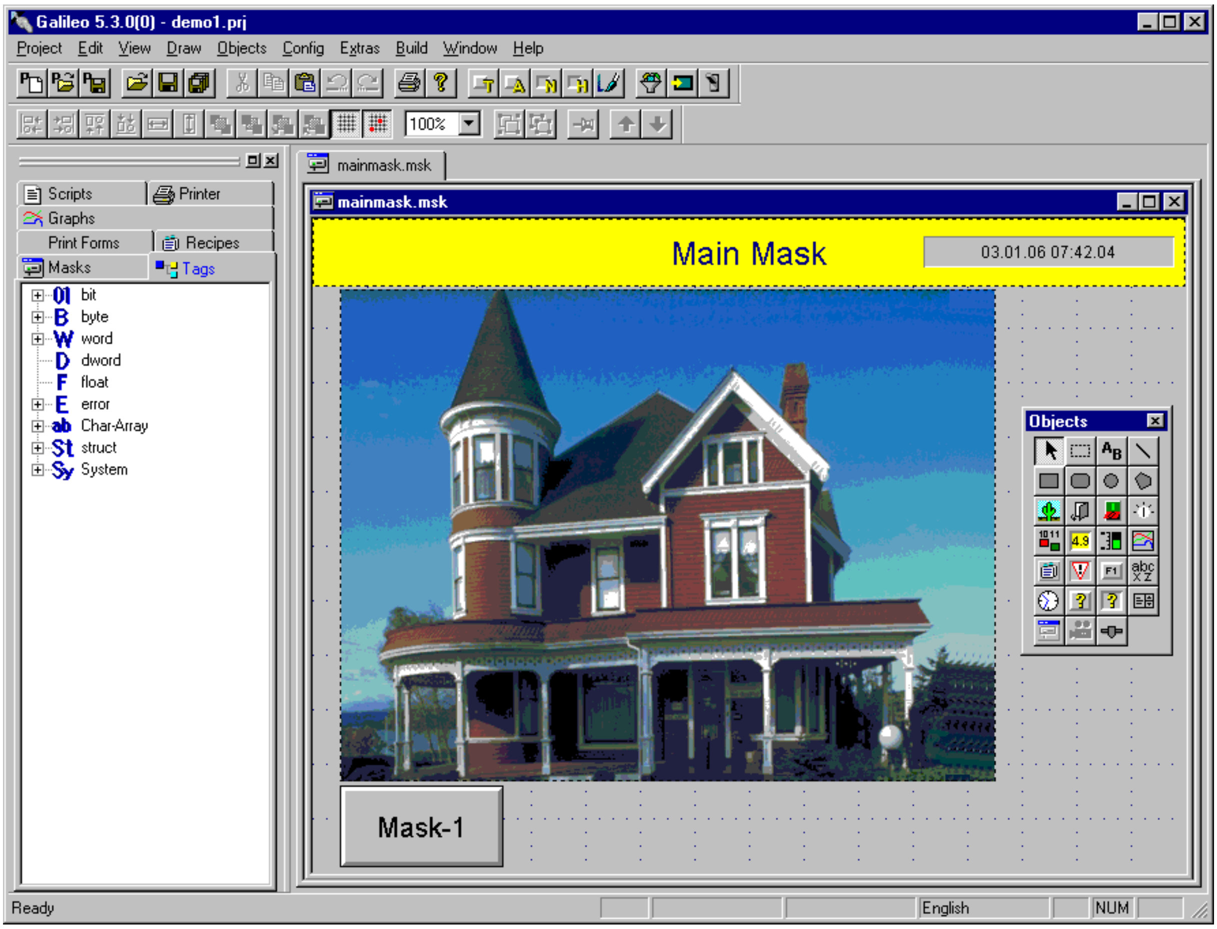
4 Creating a Sample Project

4.1 What This Project Contains

This chapter demonstrates the basic functions of the GALILEO Panel Design Tool using a simple project as an example. Study the section Procedure for creating a new project before working through this project example.

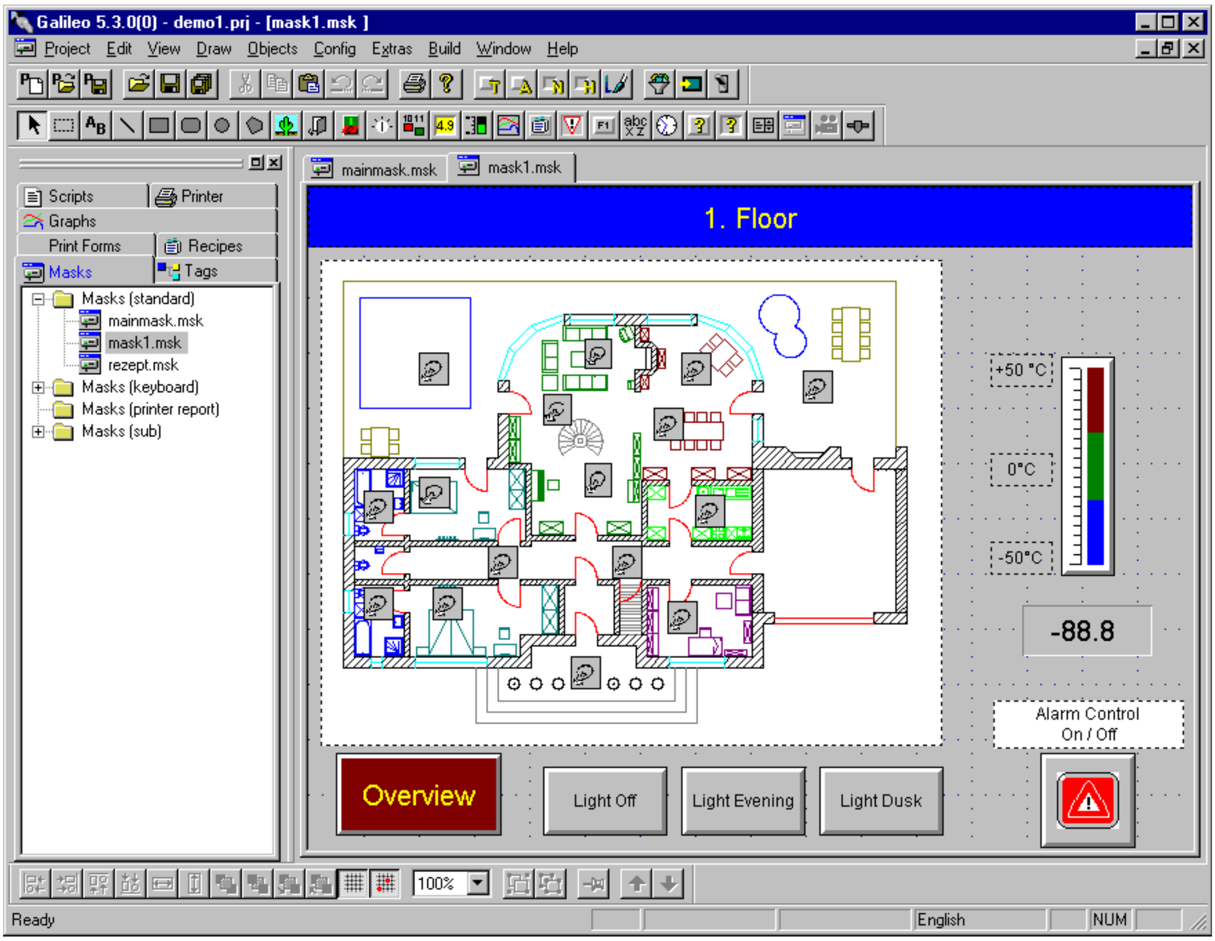
This project has not been designed for a real system, machine or building, but rather in order to demonstrate the features that are possible with the software. A simple building installation was selected for this demo project.

The **Main** mask contains the following functions and objects: mask change, text, bitmap, date/time display, mask change.



Mask 1 with a groundplan contains the following functions and objects:

- Switch for switching lighting and alarm control on/off
- Value entry / display
- Bargraph display with input option via numeric keyboard

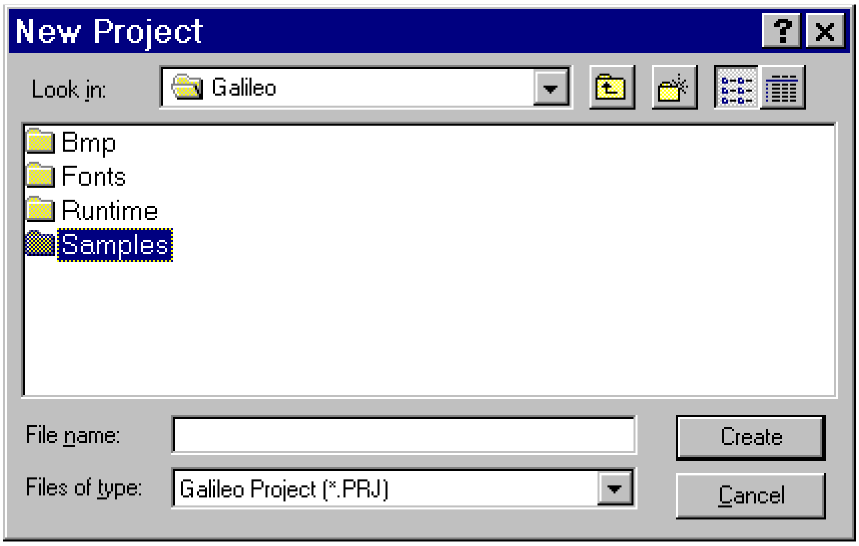


4.2 Starting GALILEO

4.2.1 Starting GALILEO

4.2.2 Creating a new project

- Select the menu point New in the Project menu or click



New Project

Look in: Galileo

- Bmp
- Fonts
- Runtime
- Samples

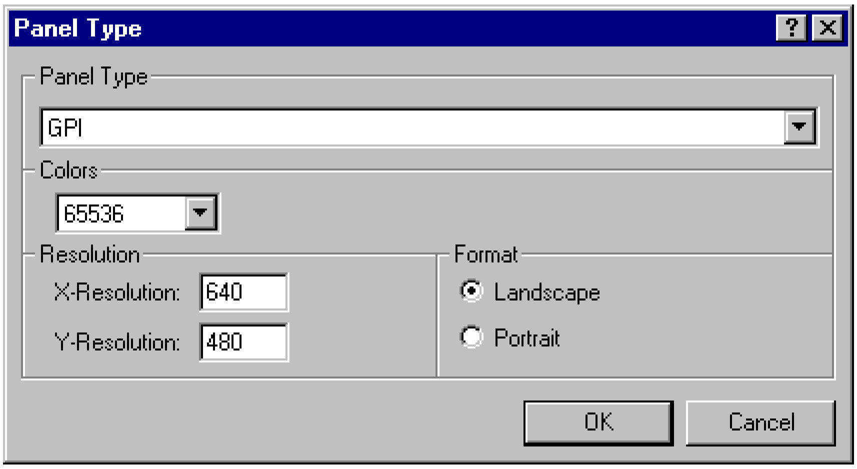
File name:

Files of type: Galileo Project (*.PRJ)

- Open the "Samples" folder
- Click under Samples to open a new file named "House"
- Enter your project name "Demo1".
- Click Create

4.2.3 Select Panel Type

- Select panel type
- Select color
- Select format
- Click OK



Panel Type

Panel Type: GPI

Colors: 65536

Resolution

X-Resolution: 640

Y-Resolution: 480

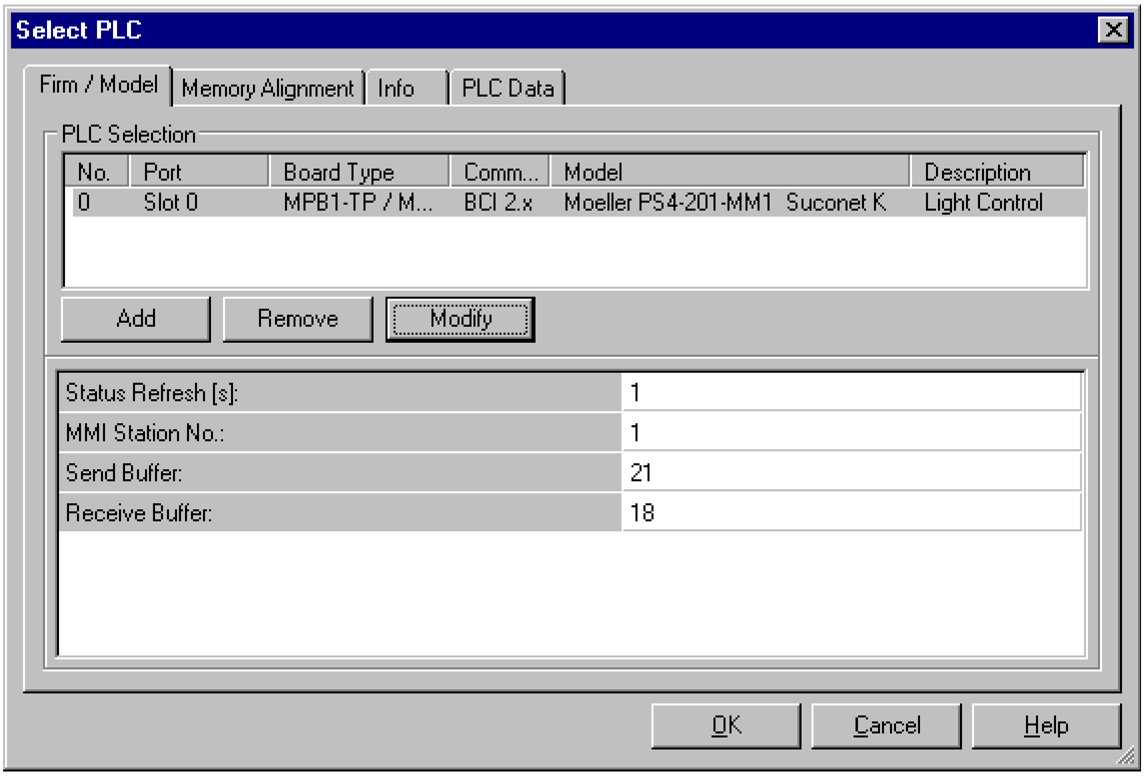
Format

● Landscape

○ Portrait

4.2.4 Select PLC

Open the 'Config' menu and then Select PLC to define the PLC type and set the protocol. Define also the protocol and the baud rate according to the protocol used.



Select PLC

Firm / Model | Memory Alignment | Info | PLC Data

PLC Selection

No.	Port	Board Type	Comm...	Model	Description
0	Slot 0	MPB1-TP / M...	BCI 2.x	Moeller PS4-201-MM1 Suconet K	Light Control

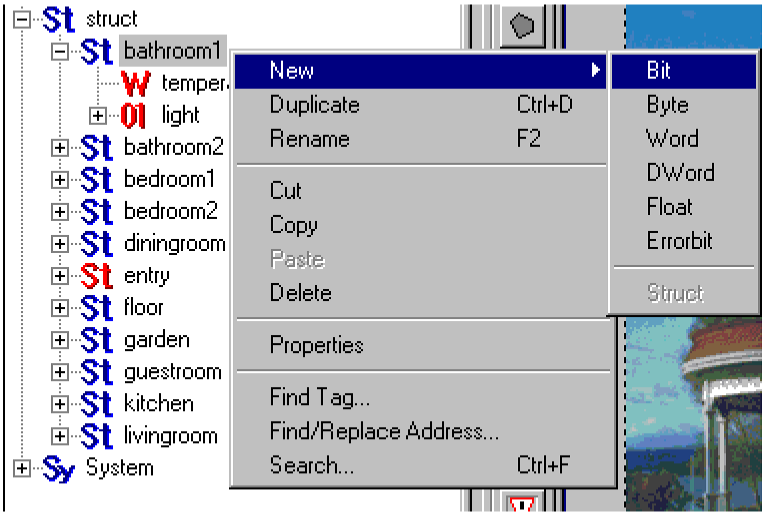
Add | Remove | Modify

Status Refresh [s]:	1
MMI Station No.:	1
Send Buffer:	21
Receive Buffer:	18

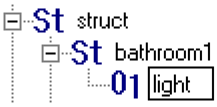
OK | Cancel | Help

4.2.5 Defining Tags

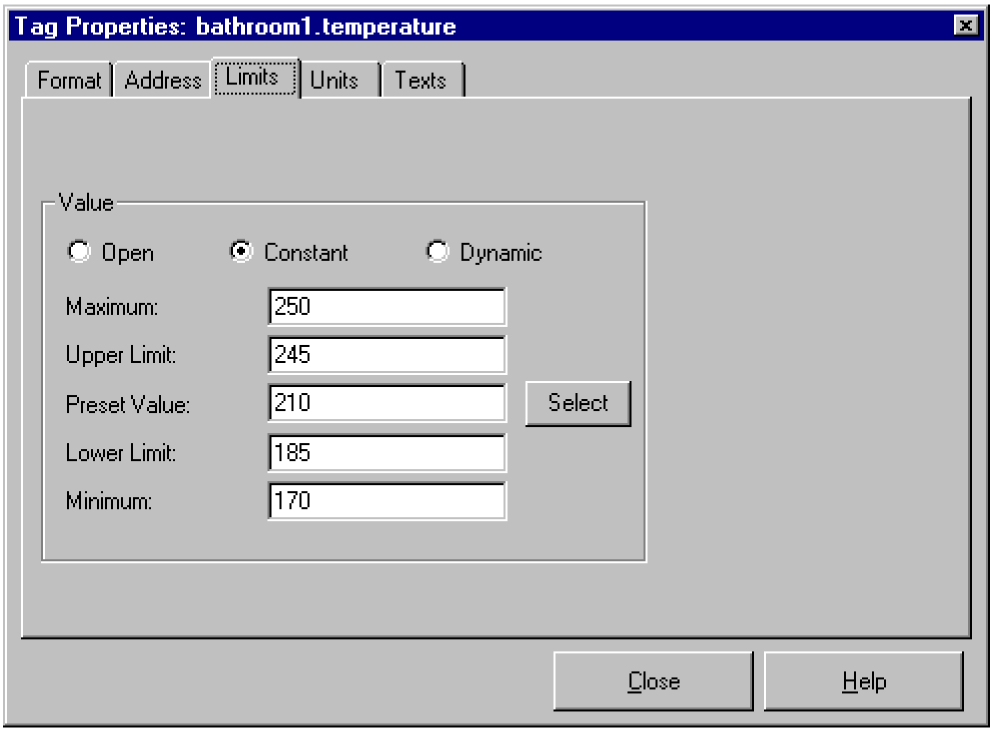
- The dynamic objects such as Buttons, Values, Value Entries etc... require variables (tags). In the "Tag Toolbar" click the right mouse button at the place where the tag should be inserted.
- Select a bit tag in the Tag Popup Menu under New.



- Enter the name of the tag and confirm with the 'Return'.



- Make a copy of bit tag 'light' and insert in further structures.
- Create the tag 'temperature' of type 'Word'.
- Change to the 'Limits' panel of the properties and enter the following.



Tag Properties: bathroom1.temperature

Format | Address | Limits | Units | Texts

Value

○ Open ● Constant ○ Dynamic

Maximum: 250

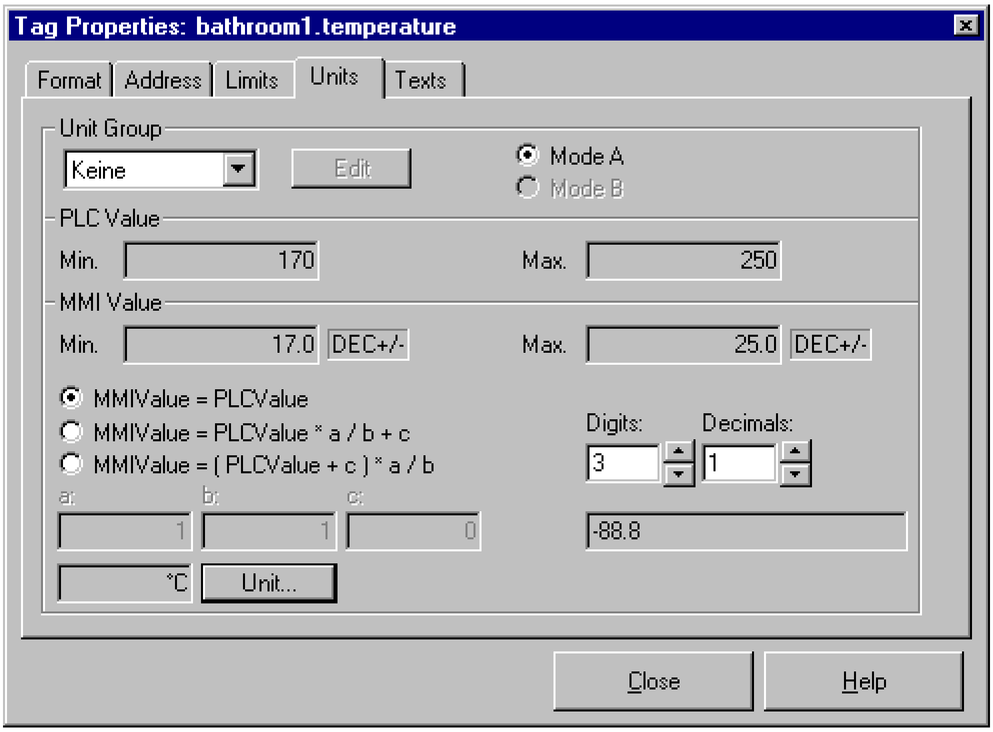
Upper Limit: 245

Preset Value: 210

Lower Limit: 185

Minimum: 170

- Select the "Units and Conversion Factors" panel and make the following entries.



Tag Properties: bathroom1.temperature

Format | Address | Limits | Units | Texts

Unit Group

Keine

● Mode A ○ Mode B

PLC Value

Min. 170 Max. 250

MMI Value

Min. 17.0 DEC+/- Max. 25.0 DEC+/-

● MMIValue = PLCValue

○ MMIValue = PLCValue * a / b + c

○ MMIValue = (PLCValue + c) * a / b

a: 1 b: 1 c: 0

Digits: 3 Decimals: 1

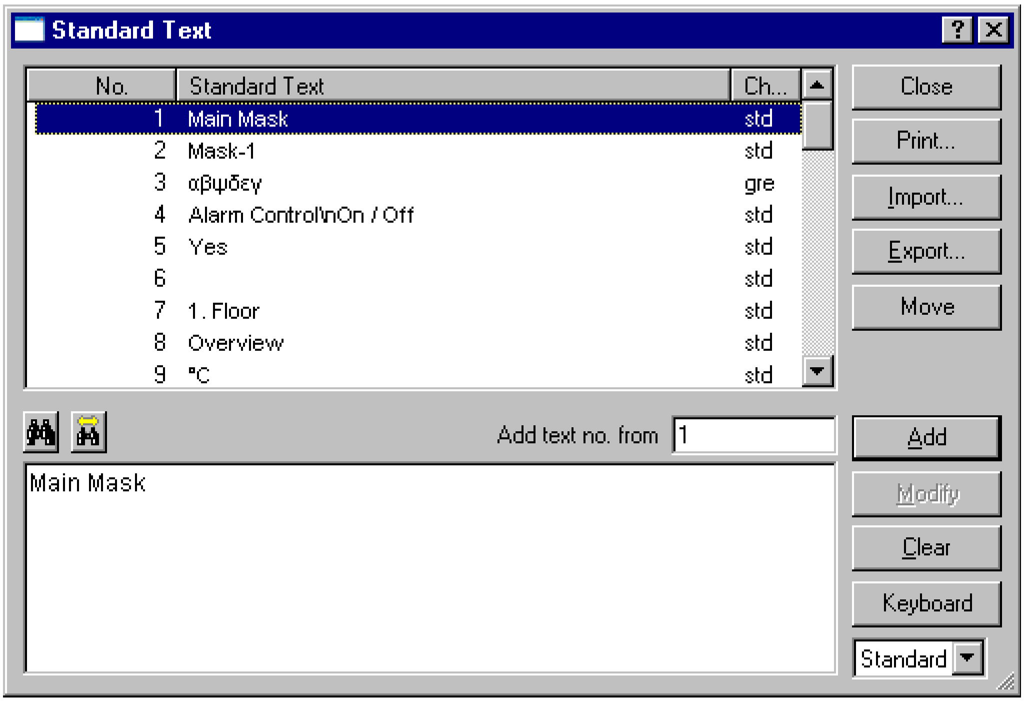
-88.8

°C

- Make a copy of the Word tag 'temperature' and insert it in the other structures.
- Return via Close

4.2.6 Defining Texts

Select Define Standard Text under Configure and enter the following texts.



No.	Standard Text	Ch...
1	Main Mask	std
2	Mask-1	std
3	αβψδεγ	gre
4	Alarm Control\nOn / Off	std
5	Yes	std
6		std
7	1. Floor	std
8	Overview	std
9	°C	std

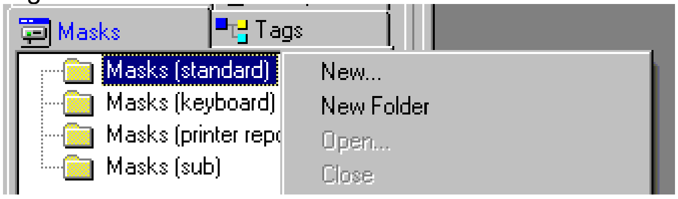
Add text no. from: 1

Main Mask

Use the key combination Ctrl + Return to make a line break for texts using several lines, such as "Alarm||On/Off".

4.2.7 Creating new masks

- Right-click the mouse in the mask overview and select the New... command.



- Enter "main mask " as the mask name.
- Create the next mask with the name "Mask 1" according to the steps described in points 1 to 2.

4.2.8 Saving the project and masks

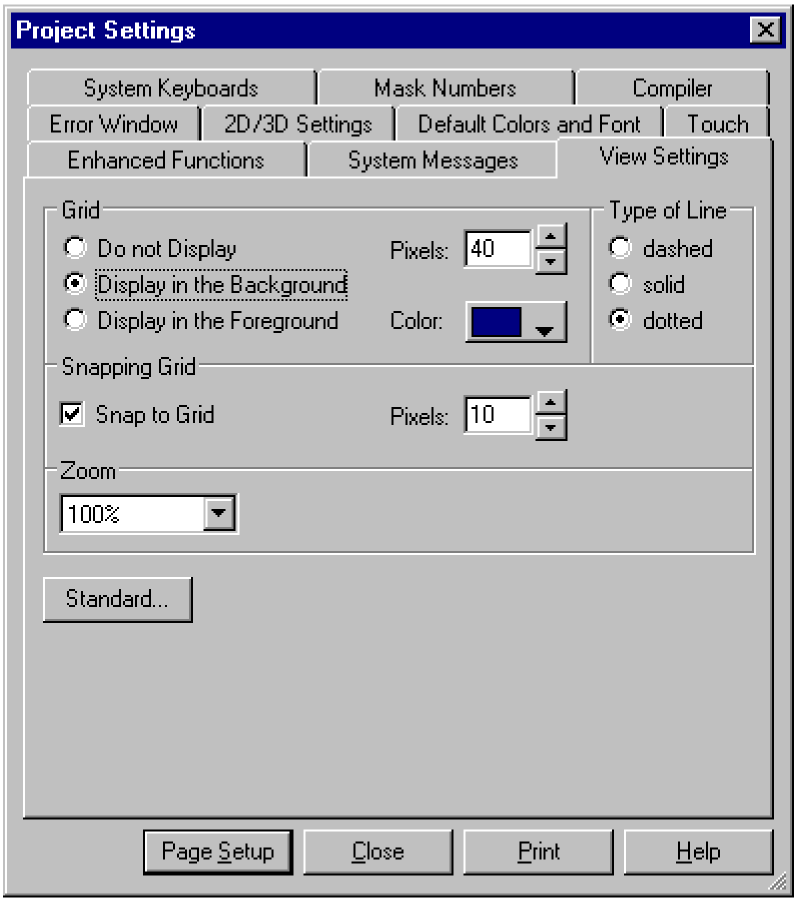
You have now created two empty masks and should now save the work that you have done so far.

This is carried out by clicking menu point Save Project in the Project menu or by clicking the icon.

Save your project regularly during your work in order to ensure that you do not lose anything in the event of a PC failure.

4.2.9 Drawing the first mask

- Click the □ icon in order to maximize the Main Mask.



Grid

○ Do not Display
● Display in the Background
○ Display in the Foreground

Pixels: 40

Color: 🟦

Type of Line

○ dashed
○ solid
● dotted

Snapping Grid

☑ Snap to Grid

Pixels: 10

Zoom

100%

- Select the Settings line in the View menu. Selecting a line grid will help you to position mask objects reliably. This grid will not appear in the final mask.
- Click "Show Grid" and/or "Snap to Grid".
- Confirm with OK

4.2.10 Creating the Background Picture

Creating the Background Picture

Creating the title bar

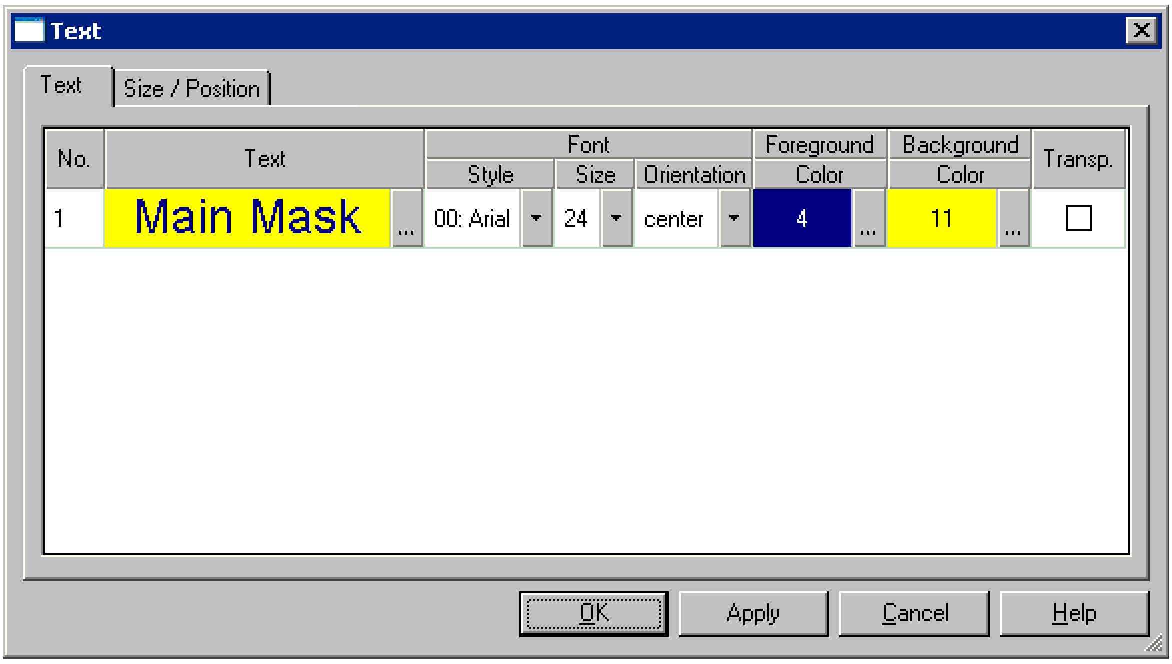
Using the picture as a background

Displaying time/date

Defining a mask change

Creating the title bar

- Select the menu entry Text in the Draw menu or click the icon AB
- Draw an object and position the cursor inside the area of the screen mask. Hold down the left mouse button and drag a field by keeping the mouse button depressed. Release the mouse button at the required position. This is a standard procedure for all objects and must be carried out for all similar steps that are mentioned.
- Double-click the newly drawn object to open the Properties dialog box. This is a standard procedure for all objects and must be carried out for all similar steps that are mentioned.



Text

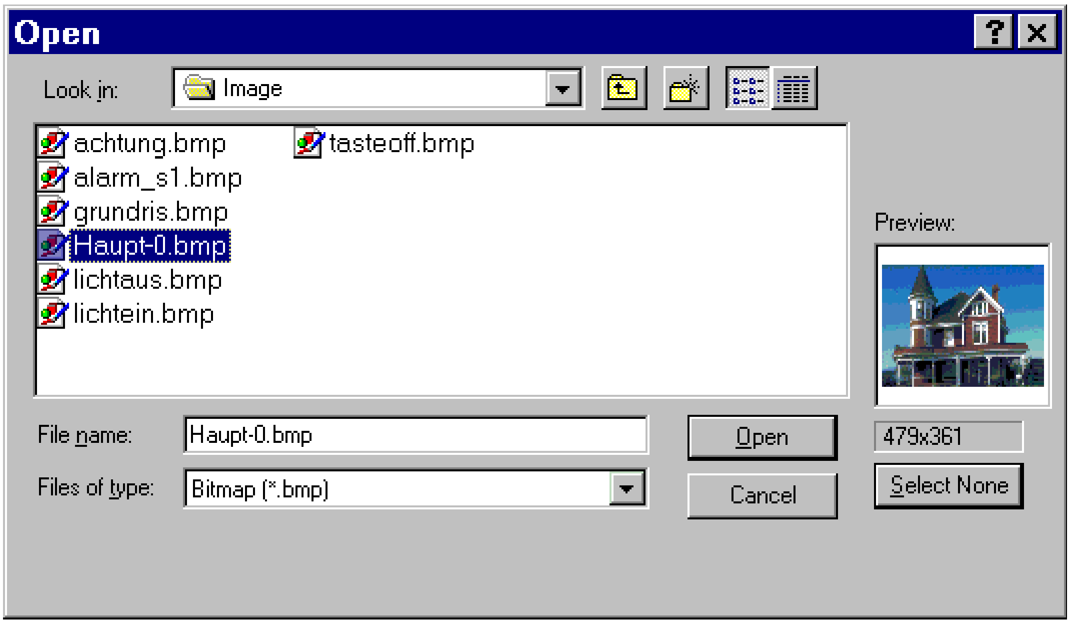
Text | Size / Position

No.	Text	Font			Foreground	Background	Transp.
		Style	Size	Orientation	Color	Color	
1	Main Mask ...	00: Arial	24	center	4 ...	11 ...	□

- Select "Main Mask" and adjust the Font Style, Font Size and Color as required.
- Exit the dialog box by clicking OK
- Enlarge and move the title bar as required.

Using the picture as a background

- Click menu point Bitmap in the Draw menu or the icon
- Draw an object
- Double-click to open the Properties window
- Click the ... button in the Bitmap field
- Click the Import button and choose the "..\Samples\Sample1\Image" folder in the Galileo directory. Select "Haupt-0"
- Click the Open button



Open

Look in: Image

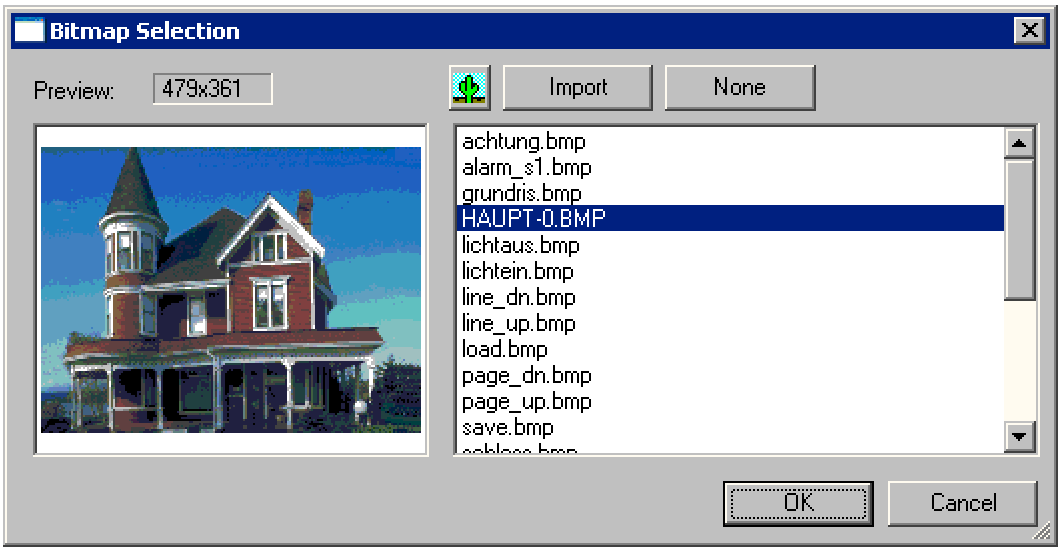
achtung.bmp
alarm_s1.bmp
grundris.bmp
Haupt-0.bmp
lichtaus.bmp
lichtein.bmp
tasteoff.bmp

Preview:

479x361

File name: Haupt-0.bmp

Files of type: Bitmap (*.bmp)



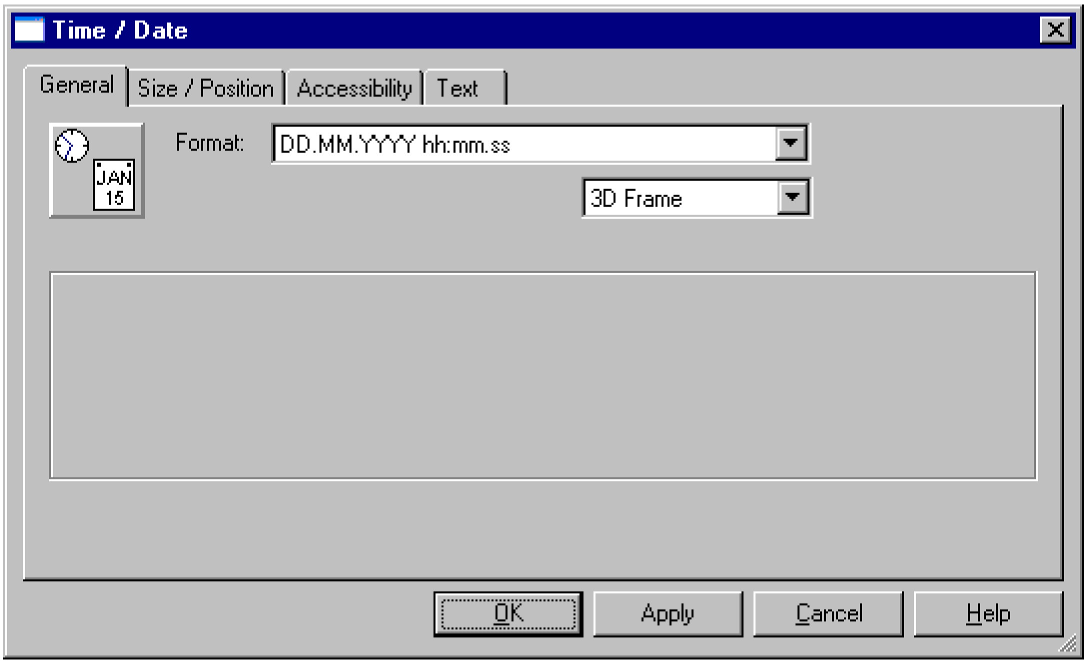
Preview: 479x361

achtung.bmp
alarm_s1.bmp
grundris.bmp
HAUPT-0.BMP
lichtaus.bmp
lichtein.bmp
line_dn.bmp
line_up.bmp
load.bmp
page_dn.bmp
page_up.bmp
save.bmp

- Click OK to accept the bitmap
- Accept the properties by clicking OK
- Position the bitmap in your mask

Displaying time/date

- Click menu point Time/Date in the Objects menu or the 🕒 icon. Draw the object required and double-click to open the Properties dialog box.
- Select Format and then Color.
- Position the object within the mask.

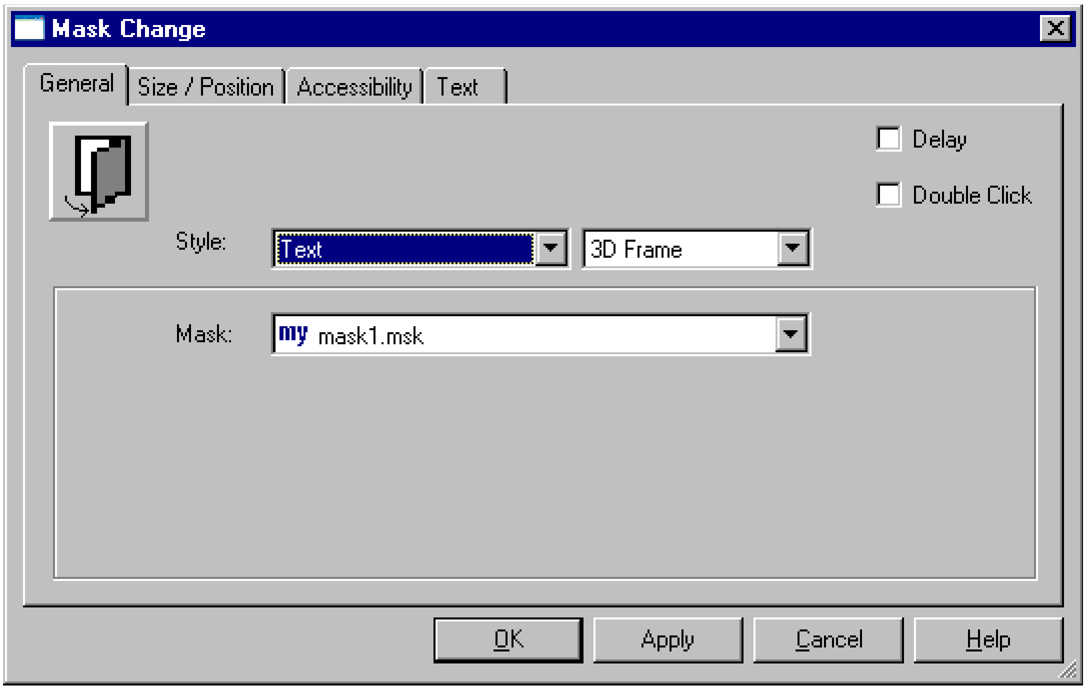


Format: DD.MM.YYYY hh:mm.ss

3D Frame

Defining a mask change

- Click menu point Mask Change in the Objects menu or click the icon. Draw the object and double-click to open the Properties window.



□ Delay

□ Double Click

Style: Text 3D Frame

Mask: mask1.msk

- Select the mask to be activated with the mask change. Select the text for the button inscription on the Text panel.

The main mask is now ready. Do not forget to save your work !!!

4.2.11 Creating mask 1

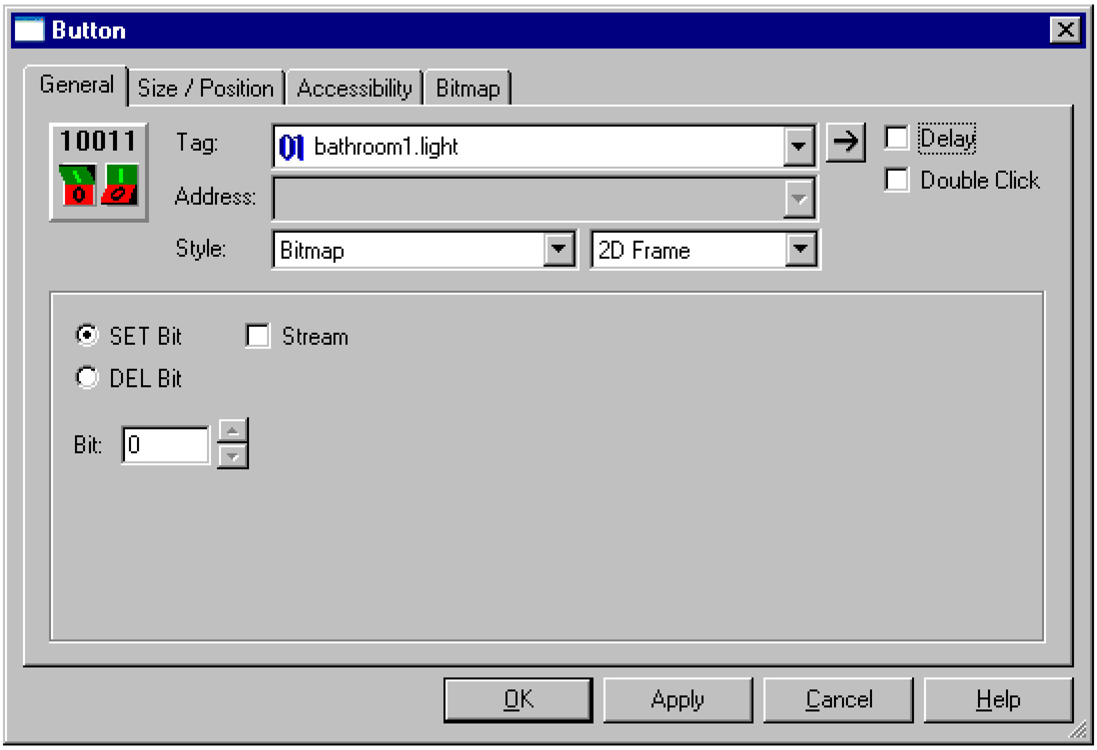
Creating mask 1

- Call up mask 1 either via the windows menu or via mask overview
- Create the background. Import bitmap "Groundplan" from the "Samples\Sample1\Image" directory and create the title bar with the text "1st Floor "

4.2.12 Adding dynamic objects

Adding dynamic objects

- Click menu point Button in the Objects menu or the ▣ icon.



Tag: bathroom1.light

Address:

Style: Bitmap | 2D Frame

□ Delay

□ Double Click

● SET Bit

○ DEL Bit

□ Stream

Bit: 0

- Create the switch for General Lighting On/Off
- Tag: "Button1"
- Style: Bitmap
- Change to panel "Bitmap" and import the bitmaps "lichtein.bmp" and "lichtaus.bmp" from the "Samples\Sample1\Image" directory and assign the switch positions "Off" and "On". The function can checked in the Preview window.
- Click OK to close the dialog
- Adjust the switch to the required size and position.
- Create the On / Off switch for the Alarm System in the same way.
- Write Text objects as descriptions of the two switches (arranged in the mask above the buttons.)
- Create other light switches for the individual rooms. For this select the style 2D Frame and assign different tags (variables) to the objects. Use the Windows Copy and Paste functions to reproduce the switches quickly and simply.

4.2.13 Mask change to main mask

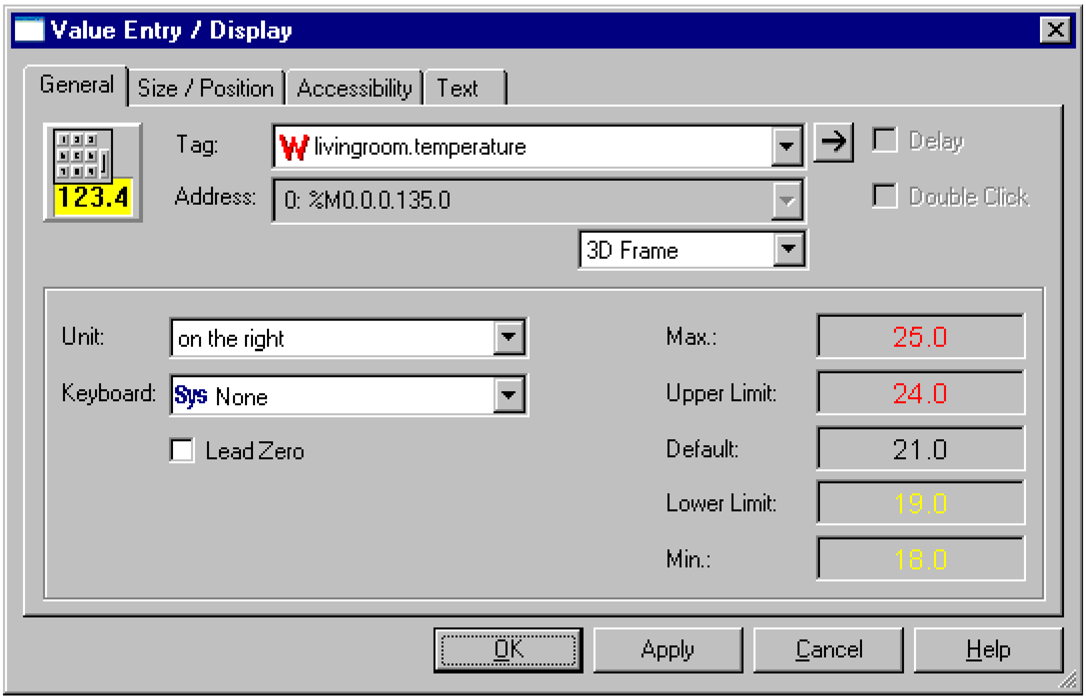
Mask change to main mask

Create the mask change to the main mask with the text Overview.

4.2.14 Showing values as numbers or as bargraphs

Showing values as numbers or as bargraphs

- Click the Value Entry / Display menu point in the Objects menu or the 4.9 icon and draw the object. Open the Properties window and assign the required parameters.



Value Entry / Display

General | Size / Position | Accessibility | Text

Tag: livingroom.temperature

Address: 0: %M0.0.0.135.0

□ Delay

□ Double Click

3D Frame

Unit: on the right

Keyboard: Sys None

□ Lead Zero

Max.: 25.0

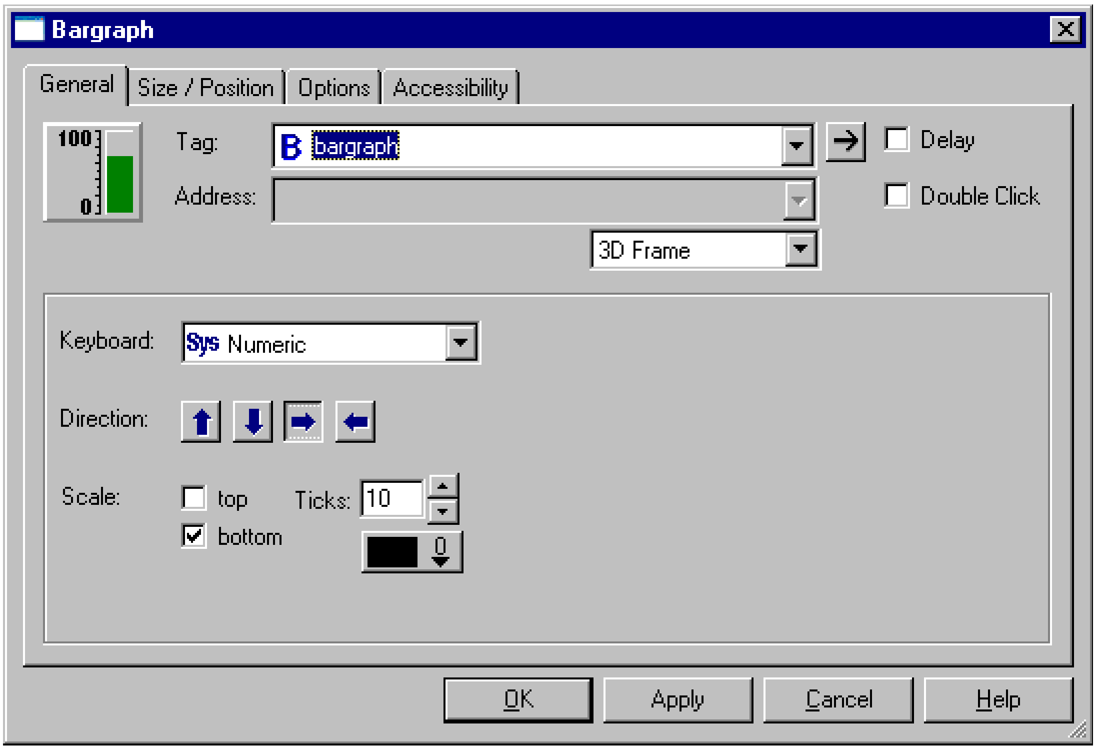
Upper Limit: 24.0

Default: 21.0

Lower Limit: 19.0

Min.: 18.0

- Close the dialog with OK and position the object in Mask 1.
- Click the menu point Bargraphs in the Objects menu or the icon, draw the object and open the Properties window.
- Set bargraph display for "value1".



Bargraph

General | Size / Position | Options | Accessibility

Tag: B bargraph

Address:

□ Delay

□ Double Click

3D Frame

Keyboard: Sys Numeric

Direction: ⬆ ⬇ ➡ ⬅

Scale: □ top ☑ bottom

Ticks: 10

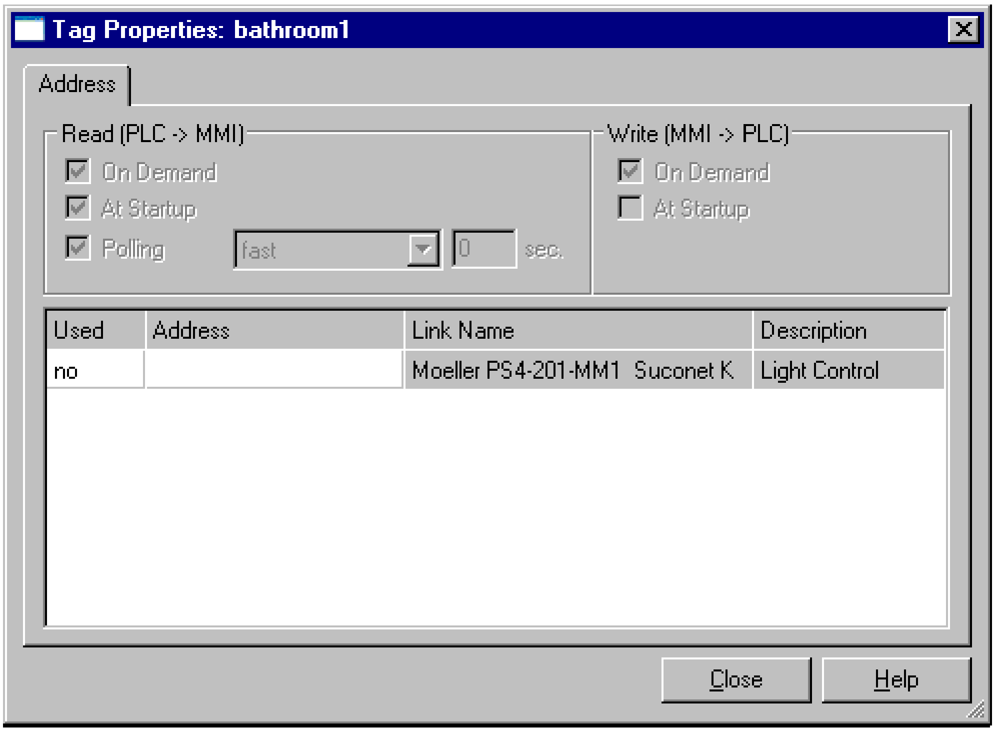
- Create additional Text objects for the scale values and position to the left of the bargraph.

The mask 1 is now ready. Do not forget to save your work !!!

4.2.15 Setting parameters for communication with the PLC

Setting parameters for communication with the PLC

- Save the mask and the project data before setting communication parameters!
- Make the following changes to the properties of the structure



Tag Properties: bathroom1

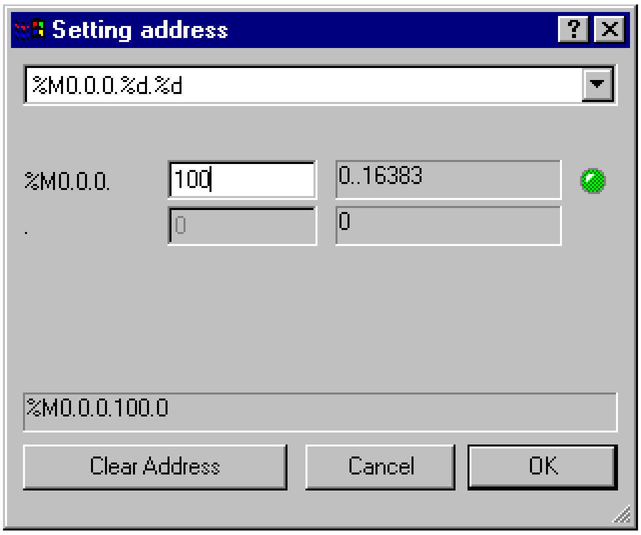
Address

Read (PLC -> MMI)
☑ On Demand
☑ At Startup
☑ Polling fast 0 sec.

Write (MMI -> PLC)
☑ On Demand
☐ At Startup

Used	Address	Link Name	Description
no		Moeller PS4-201-MM1 Suconet K	Light Control

- Left-click the address field to open the following dialog:



Setting address

%M0.0.0.%d.%d

%M0.0.0. 100 0..16383 ●
. 0 0

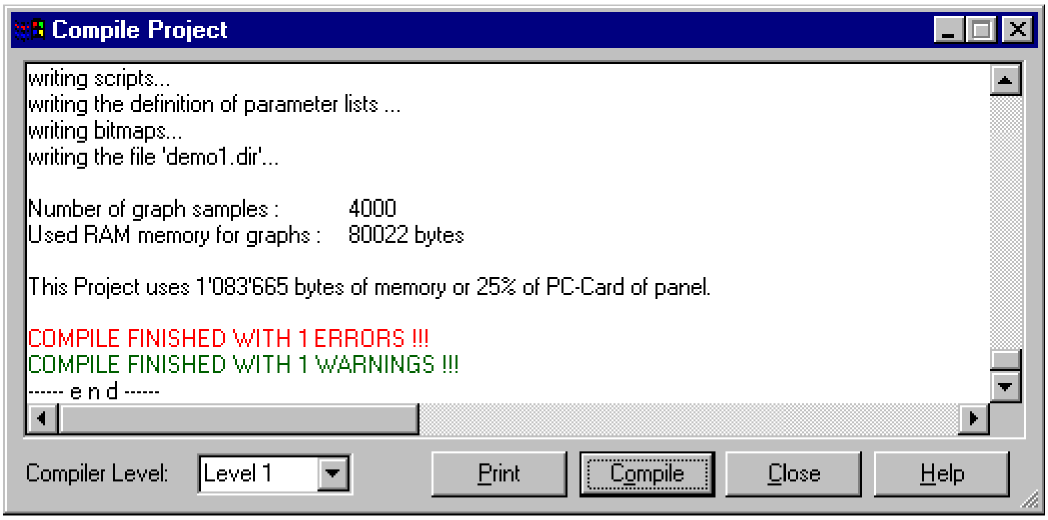
%M0.0.0.100.0

- First select the address type.
- Enter the Address. A correct entry is indicated by a green light and an invalid entry by a red light.
- Confirm with OK
- The tags inside the structure are automatically addressed from this start address.
- Select the next structure in the project overview and continue the addressing of the next structure without closing the dialog.

4.2.16 Saving and compiling the project

Saving and compiling the project

- Click menu point Compile Project in the Generate menu
- Click Compile to start the checking and generation of the optimized runtime program.



Compile Project

```
writing scripts...
writing the definition of parameter lists ...
writing bitmaps...
writing the file 'demo1.dir'...

Number of graph samples :        4000
Used RAM memory for graphs :     80022 bytes

This Project uses 1'083'665 bytes of memory or 25% of PC-Card of panel.

COMPILE FINISHED WITH 1 ERRORS !!!
COMPILE FINISHED WITH 1 WARNINGS !!!
------ e n d ------
```

Compiler Level: Level 1

4.2.17 Downloading to the Panel or testing on the PC

Downloading to the Panel or testing on the PC

Download

Testing on the PC

Download

This function copies the project files to the Flash card or transfers the project to the panel. If a Flash card is used, fitting the card in the panel. Now the project can be tested on the panel by starting it.

See also Download (Local/FTP)

Testing on the PC

Click Start Project Inspector in the "Build" menu or the icon in order to test the project directly on the PC.

See also Testing the project

4.3 Project Documentation

4.3.1 Project Documentation

A number of different functions are provided for documenting your project.

- Click menu point Project Report in the Project menu to print out all of the project data.
- Click menu point Project Information in the Project menu to display and print out project settings.
- Click menu point Mask Information in the Mask menu to display and print out the mask settings of the current mask.
- Click "Print..." in the Mask menu to print out the current mask.

5 Designing a Project

5.1 Important Points

5.1.1 Important Points

Follow the rules and recommendations described below to ensure optimum and speedy project design.

Preparation

Plan the structure of the project and masks you wish to design before you start to create the project.

Make rough sketches of the different masks and operating elements required. Check your plan for any incorrect allocation, double allocations or any other implausible features.

Prepare all the pictures (bitmaps) that are required. These can be created in a drawing program, scanned in or taken from the picture library.

Order of objects

The order of the objects in the project plays an important role in how the mask is structured.

The static objects are drawn first of all and then the dynamic ones.

When an object is created, the dynamic objects are automatically placed in front of static objects. They are also kept in front of static objects even when they are moved to the background ("To the background").

Configuring data blocks

The communication between the MMI and PLC is always carried out in data blocks (data blocks) and not individual values. This ensures more efficient communication than if each byte or bit was transferred separately.

For this it must be ensured that data of the same type or group is assigned to the same data block.

Color palettes

The same color palette must be used for the entire project. This ensures that selected color settings are not changed, even if a new picture is modified. When a project is created, the design software will request the name of the color palette required.

See also Color Palette

5.2 Operation

5.2.1 Operation

Key assignments

Moving objects

Enlarging and reducing the mask view

Enlarging and reducing objects

Enlarging and reducing dialogs

Properties of objects

Copying objects

Undo

Context menu

Color Selection

Options

5.2.2 Key assignments

The following key assignments simplify project design:

F1 key:	Call up Online documentation
F5-Key:	Test the project on the PC (see also testing the project)
F7-Key:	Project compiling
Cursor keys	Move objects
ALT + CTRL + cursor keys or ALT GR + cursor key:	Move objects with snap to grid settings inactive *
CTRL + cursor keys:	Move objects quickly
SHIFT + cursor keys:	Enlarge or reduce objects
ALT + CTRL + SHIFT + cursor keys or ALT GR + SHIFT + cursor keys:	Enlarging or reducing objects with snap to grid settings inactive *
ALT + ENTER:	Open the Properties dialog box of the selected object.
SHIFT + Left Button (Mouse):	Select an object or deselect if it is already selected. Selecting several objects is also possible.
CTRL + Left Button (Mouse):	Pressing the CTRL key and the clicking the left-mouse button at the same time will only select one object, even if the object is part of a group. See also Group
CTRL + ENTER:	Define Text: insert a line break
CTRL + C or CTRL + Insert:	Copy: objects or text
CTRL + X or CTRL + Delete:	Cut: objects or text
CTRL + V or SHIFT + Insert:	Paste: object or text
CTRL + F :	Search for objects or tags
CTRL + Z :	Undo
CTRL + Y :	Redo
Right mouse button:	Context menu call, if the cursor is located within the mask.
CTRL + F6	Show next mask
ALT + SHIFT + F6	Show previous mask

*See also View Settings

5.2.3 Moving objects

An object must be selected beforehand in order to move it. Hold down the left mouse button with the cursor positioned inside the object concerned and then move the cursor via the mouse. The object will disappear whilst the cursor is being moved and only the outline of the object is shown. The object will, however, reappear as soon as the left mouse button is released.

A selected object can also be moved using the cursor keys (Up, Down, Left, Right) on the keyboard. In this case the snap to grid settings will be active. Pressing the CTRL key at the same time will cause the object to be moved quickly.

Pressing ALT+CTRL or the ALT GR key at the same time as using the cursor keys will enable the selected object to be moved without the snap to grid settings being active.

5.2.4 Enlarging and reducing the mask view

The mask view can be reduced or enlarged via View Settings in the View Settings dialog or via the Toolbar "Draw" .

5.2.5 Enlarging and reducing objects

An object must be selected in order for it to be changed in size. Small black rectangles will appear around the frame of the object when it is selected. If these rectangles are clicked and the left mouse button depressed, the height and/or width of the frames can be changed by moving the mouse.

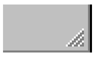
Pressing the Shift key at the same time allows the size of a selected object to also be changed using the cursor keys (Up, Down, Left, Right). In this case the snap to grip settings will be active.

Pressing the CTRL key at the same time allows the selected object to be enlarged or reduced quickly.

Pressing the ALT+CTRL keys or the ALT GR key at the same time allows the selected object to be enlarged or reduced without the snap to grid settings being active.

5.2.6 Enlarging and reducing dialogs

The size of different dialogs can be changed and their size retained the next time Galileo is started. Modifiable dialogs have the following marking in the bottom right corner:



5.2.7 Properties of objects

To set or modify the properties of an object, double-click the left mouse button with the cursor positioned inside the object concerned to call up the dialog. This object-dependent dialog will contain all the settings of the object.

The same dialog appears, if "Properties" of the menu "Edit" or of the Context menu is selected. An object must be selected in order for it to be changed.

5.2.8 Copying objects

It is also possible to copy an object by pressing CTRL key and the left mouse button at the same time. After an object has been copied, the new object will be located directly above it.

5.2.9 Undo

The last functions such as moving, copying, enlarging and deleting objects can be undone. Changes to Properties of objects cannot be undone.

The Undo command can be accessed via the menu, via the toolbar or via the Context menu.

See also Redo

5.2.10 Redo

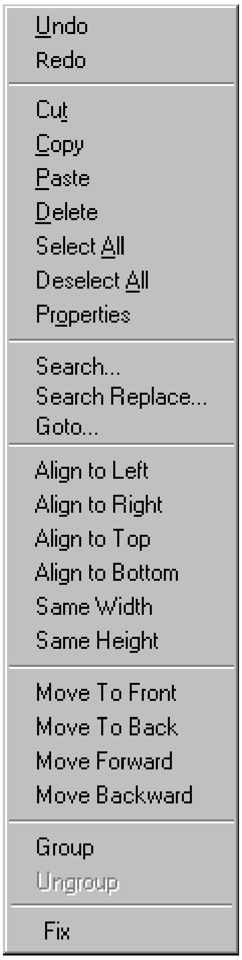
The last functions such as moving, copying, enlarging and deleting objects can be redone. Changes to Properties of objects cannot be redone.

The Undo command can be accessed via the menu, via the toolbar or via the Context menu.

See also Undo

5.2.11 Context menu

Click the right mouse button with the cursor positioned inside the mask frame concerned and it will appear the following dialog.



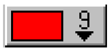
The number of menu points available depends on whether the mouse cursor is over an object, or whether an object or group has been selected.

Select Properties of objects to call up the dialog of the object concerned. Further information on the Properties dialog boxes is provided in the description of the relevant object (Properties of static objects and General).

See also Search, Search Replace, Toolbar "Draw", Group, Goto

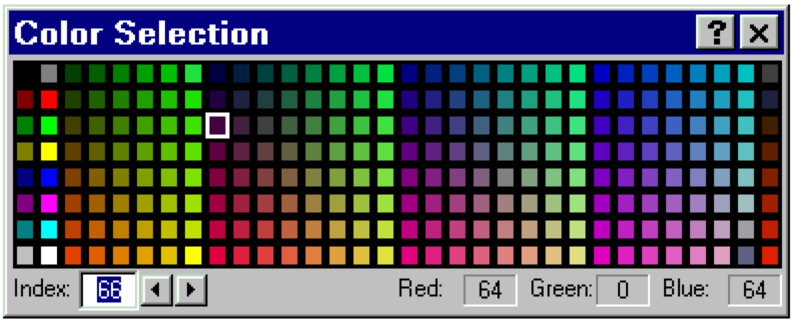
5.2.12 Color Selection

The following button is always used for color selection:



The display within the touch zone consists of a rectangle in the color selected. The zero- based color index of the selected color is shown as information next to it.

The following dialog will appear as soon as the touch zone is selected:



Color Selection

Index: 66 ◀ ▶ Red: 64 Green: 0 Blue: 64

The dialog is reclosed automatically after a color has been selected with the mouse. Colors can also be selected via the keyboard using the cursor keys.

Index

Display of the zero-based color index within the color palette. The required color index can also be entered.

◀ ▶

These buttons can also be used to change the color index.

Red

Red color value of the currently selected color

Green

Green color value of the currently selected color

Blue

Blue color value of the currently selected color

5.2.13 Options

Options

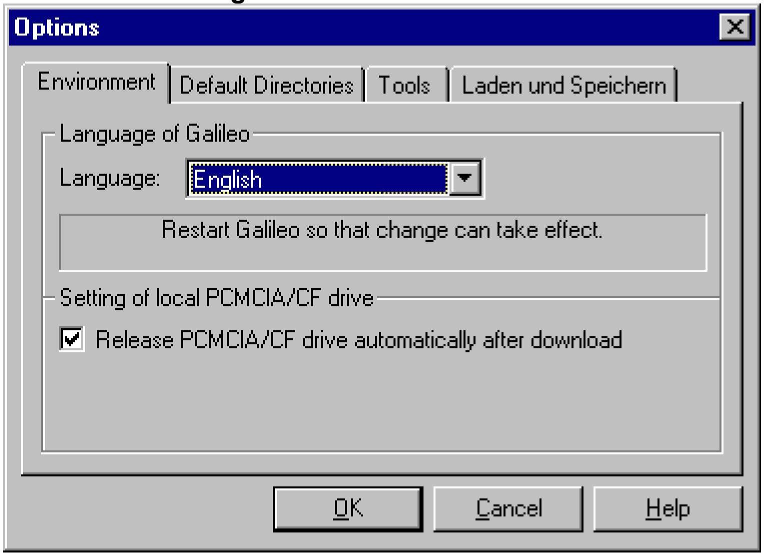
The following program settings only have to be set once when Galileo is started for the first time. They can also be changed subsequently as required. The settings are retentive and apply to any project.

Environment Settings

Default Directories

Tools

Environment Settings



Options

Environment | Default Directories | Tools | Laden und Speichern

Language of Galileo

Language: English

Restart Galileo so that change can take effect.

Setting of local PCMCIA/CF drive

☑ Release PCMCIA/CF drive automatically after download

Galileo Language

To set the menu, dialogs and the online help to the preferred language select one entry of the list.

Note:
To activate the new language, you do have to restart Galileo.
All standard Windows dialogs (such as file open, file save, etc.) will appear in the language of the Windows version installed.

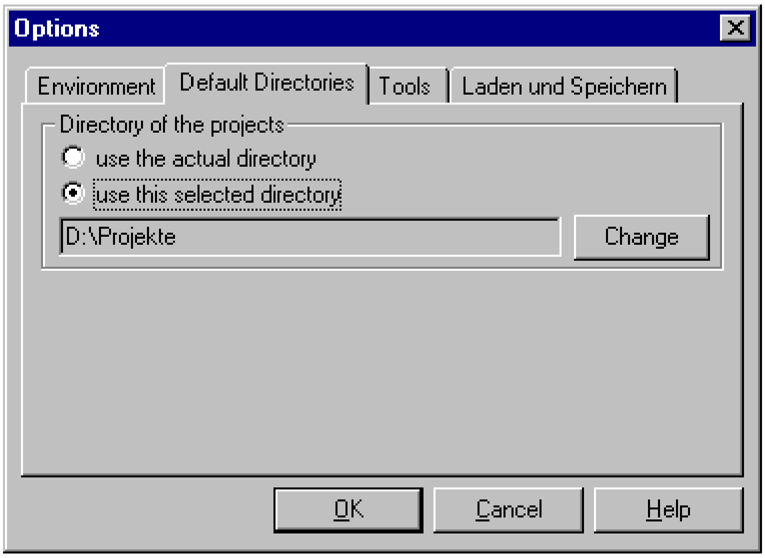
Setting of local PCMCIA/CF drive

There are currently a wide range of PCMCIA and CF drives with fundamentally different characteristics. With most drives, the medium can only be removed if it is logged off beforehand. USB drives, on the other hand, allow the media to be removed without logging off.

To simplify everyday tasks in Galileo, you are asked after the download whether the medium is to be logged off or not. This setting was introduced since drives are logged off in different ways. The setting should be carried out in the following manner.

Internal drives:
Activate the option so that the medium is logged off.
USB drives:
Deactivate the option, otherwise the entire USB drive will have to be logged off.

Default Directories



Directory of the projects

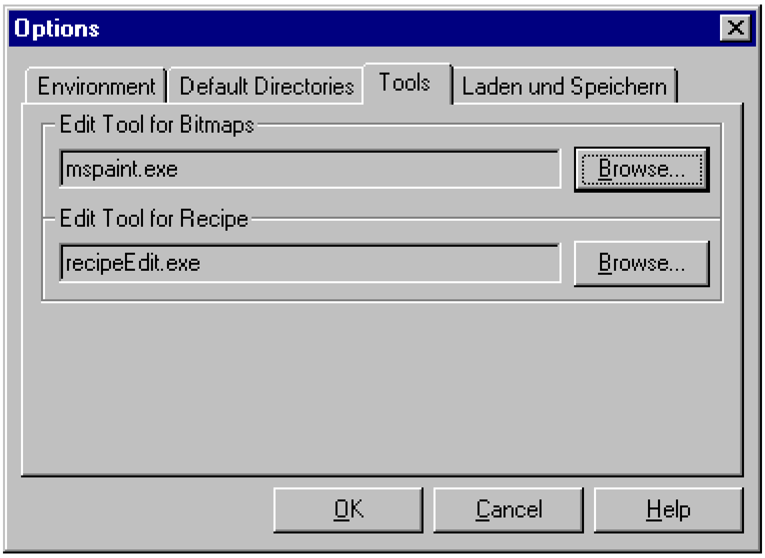
○ use the actual directory

● use this selected directory

D:\Projekte

When using the functions Creating a new project, Open Project and Save Project As... either the current directory (Windows ® Standard) or the directory specified will be selected.

Tools



Edit Tool for Bitmaps: mspaint.exe

Edit Tool for Recipe: recipeEdit.exe

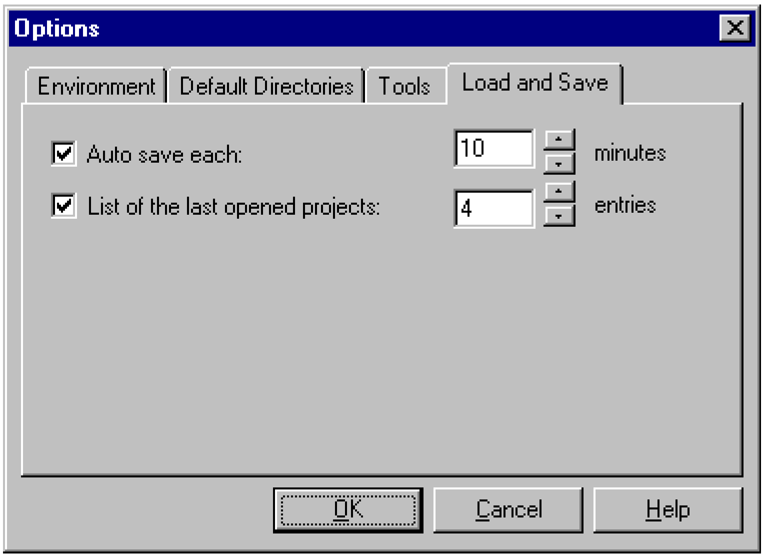
Edit Tool for Bitmaps

Use the **Browse** button to select a program that can be called directly from the Bitmap dialog to edit a bitmap.

Edit Tool for Recipe

You can click the Browse button to select a program that can be called directly from the Context Menu of Recipe for editing recipes.

Load and Save



☑ Auto save each: 10 minutes

☑ List of the last opened projects: 4 entries

Auto save each x minute

Activating this setting will cause the project and all masks to be saved automatically every x minutes.

List of the last opened projects

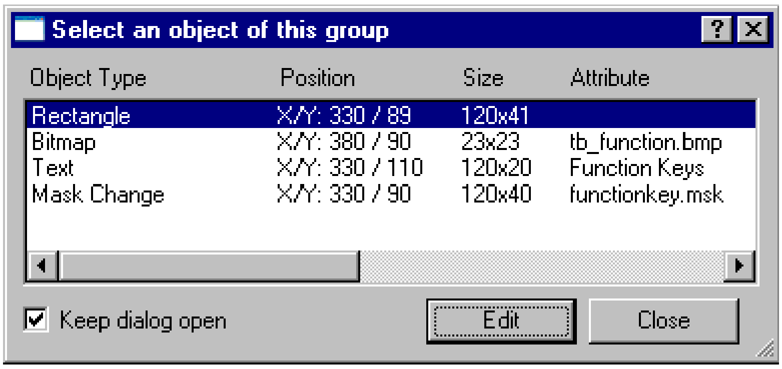
The Project menu shows a list of the last projects opened in chronological order. This setting allows you to set the maximum length of this list.

5.3 Object

5.3.1 Group

The "**Group**" command is used to combine the selected objects into one group. All objects that are combined in a group can only be moved, cut, copied or pasted together.

Double-clicking a group or clicking "Properties" will call up the following dialog for group object properties:



Object Type	Position	Size	Attribute
Rectangle	X/Y: 330 / 89	120x41	
Bitmap	X/Y: 380 / 90	23x23	tb_function.bmp
Text	X/Y: 330 / 110	120x20	Function Keys
Mask Change	X/Y: 330 / 90	120x40	functionkey.msk

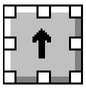
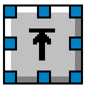
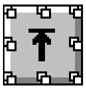
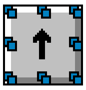
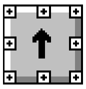
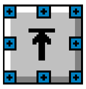
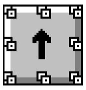
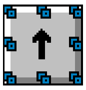
☑ Keep dialog open

Double-clicking an object in the list or selecting an object and clicking OK will show the relevant properties dialog of the object type selected. Group selections are shown slightly differently to object selections.

Click "**Ungroup**" to split up the group into individual objects.

5.3.2 Selection

The display of the selection contains different information about the object's properties. The selection indicates whether the object was marked as grouped, fixed or as the first object.

Property	Selection: first object	Selection: other objects
Normal		
Grouped		
Fixed		
grouped and fixed		

First Object

With the following functions, the first selected object shown with white markings is the reference object:

- Align left, right, top and bottom
- Equal width
- Equal height

See also Group, Fix

5.3.3 Fix

The "**Fix**" command fixes the selected objects. In other words, the object can neither be moved by the mouse nor by the arrow keys if this attribute is set on the object.

If a fixed object is grouped with other objects, the entire group cannot be moved.

Unlike the normal selection function, the selection of a fixed object is indicated differently.

5.4 Search

5.4.1 Search

Search Tags

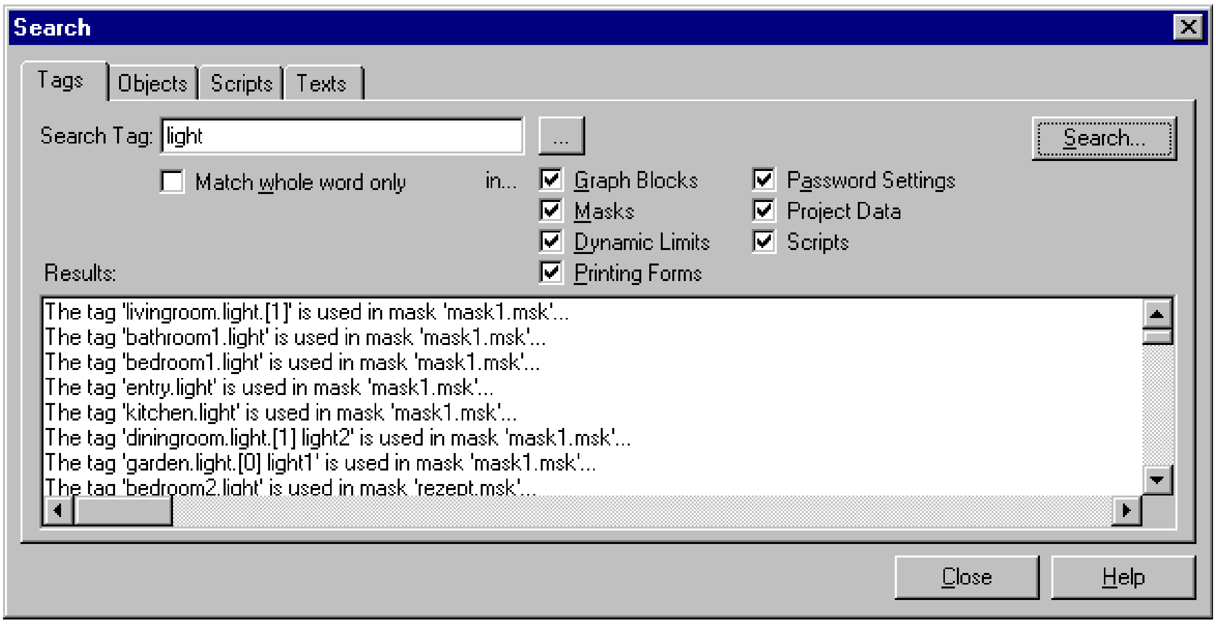
Search Object

Search Script

Search Text

See also Search Replace

5.4.2 Search Tags



Search Tag: light

☐ Match whole word only

☑ Graph Blocks
☑ Masks
☑ Dynamic Limits
☑ Printing Forms
☑ Password Settings
☑ Project Data
☑ Scripts

```
The tag 'livingroom.light.[1]' is used in mask 'mask1.msk'...
The tag 'bathroom1.light' is used in mask 'mask1.msk'...
The tag 'bedroom1.light' is used in mask 'mask1.msk'...
The tag 'entry.light' is used in mask 'mask1.msk'...
The tag 'kitchen.light' is used in mask 'mask1.msk'...
The tag 'diningroom.light.[1] light2' is used in mask 'mask1.msk'...
The tag 'garden.light.[0] light1' is used in mask 'mask1.msk'...
The tag 'bedroom2.light' is used in mask 'rezept.msk'...
```

Use the Search Tag dialog to search for a tag in a project. There are three data structures by which tags can be searched for:

- **Graph Blocks**
- **Masks (**Objects **in Masks)**
- **Dynamic limits:** All tags in the project that use dynamic limits are searched.
- **Printing Forms**
- **Password Settings**
- **Project Data**
- **Scripts**

An appropriate message will appear in the Results window if tags in the selected data structure are not found.

Note:
Large/small caps are ignored.

Search Tag

Enter in this field the name of the tag to be searched for. It is also possible to enter only part of the name - so-called wildcard characters (?, *) are not required.

Match whole word only

Activate this check box to ensure that the term found completely matches the search criterion and not just a part of it.

Results

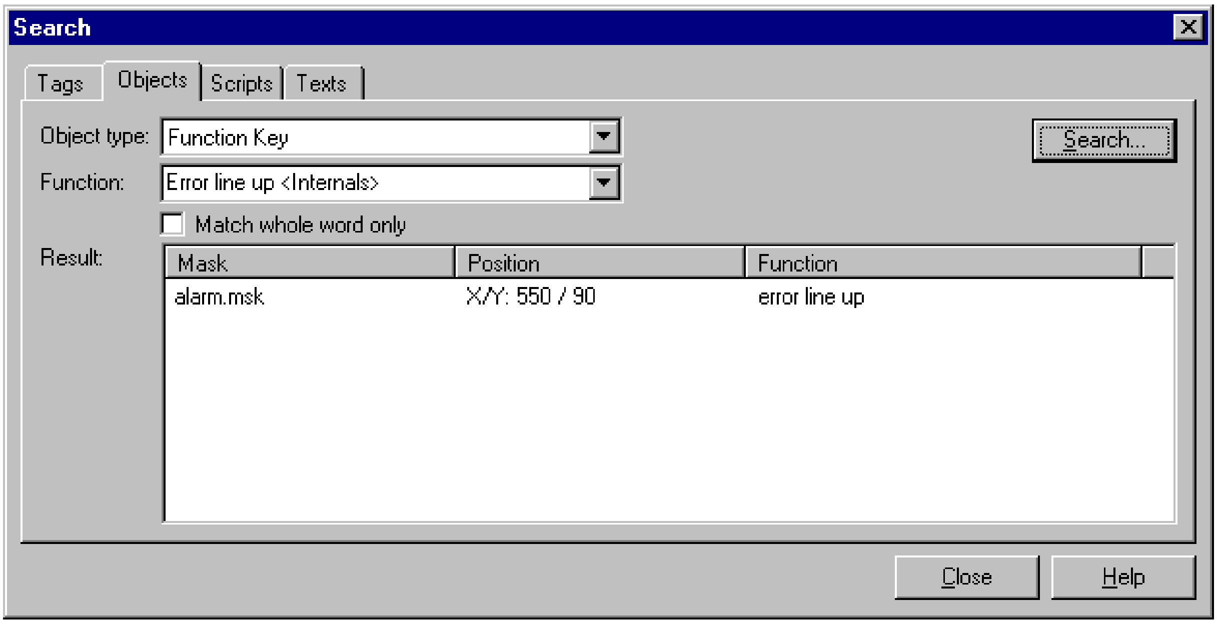
This window lists the results of the search depending on the selected data structures (**Graph Blocks**, **Masks**, **Dynamic Limits**, **Printing Forms**, **Password Settings**, **Project Data and Scripts**).

Search

Click this button to start the search operation.

See also Search Object, Search Script, Search Text

5.4.3 Search Object



Object type: Function Key

Function: Error line up <Internals>

□ Match whole word only

Result:

Mask	Position	Function
alarm.msk	X/Y: 550 / 90	error line up

Use this dialog to search for objects with particular attributes in all project masks.

Note:
Upper/lower case is ignored in Search Object.

Object type

Use this list box to select the required object. The "**Attribute (Function)**" the contents of the list box will change according to the object selected.

Attribute (Function)

Use this list box to enter additional information for the search. No entries in this box will mean that the search will be carried out on all objects of the selected type.

Depending on the **Object type** selected different data can be entered in this box. With some object types the list box contains the attributes that are possible to select, such as the list of all BIT type tags with the Key objects.

Object type	**Attribute**
Text	String or part of string to be searched for.
Line, Rectangle, Rounded rectangle, Ellipse, Polygon, Time/Date, Help Button, Help Window, Parameter List, Sub mask, Camera, Slider	No other entries possible
Bitmap	Name of the bitmap or part of the name
Mask Change	Name of the mask or part of the name
Button, Switch, Flag Display, Value Display, Value Entry, Bargraph, Slider	Name of the tag or part of the name
Graph	Name of the graph data block or part of the name
Recipe	Name of the recipe or part of the name
Error Window	Name of the error data block or part of the name
Function Key	Name of the special function or part of the name
PLC Text	Name of the data block or part of the name

Match whole word only

If this box is activated the string to be searched for must match string specified under "**Attribute (Function)**". All matching strings will otherwise be found, irrespective of whether they are parts of a longer string or not.

Note:
Upper/lower case is ignored.

Result

This list shows all search results of the search criteria defined by **Object type**, **Attribute (Function)** and objects defined by "**Match whole word only**".

Note:
Double-clicking a list entry will directly open the mask where this object was found. The Properties dialog of this object will also be opened.

The "Mask" column shows the mask name in which the object was found. The "Position" column shows the position of the object within the mask.

The "Function" column shows different data depending on **Object type**, and the type of data concerned is shown in the list under "**Attribute (Function)**".

The following definitions are required to search, for example, for objects of type Function Key with special functions containing the partial string "error":

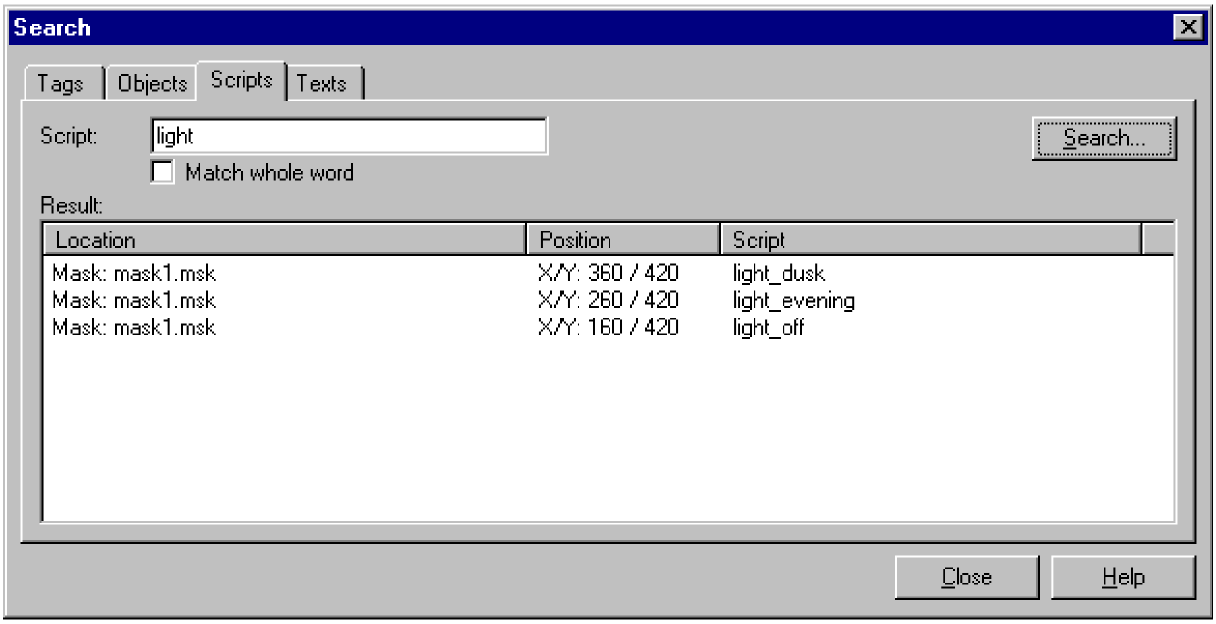
Object type:	Function key
Attribute (Function):	error
Match whole word only:	Not selected

Search

Click this button to start the search operation.

See also Search Tags, Search Script, Search Text

5.4.4 Search Script



Script: light

□ Match whole word

Result:

Location	Position	Script
Mask: mask1.msk	X/Y: 360 / 420	light_dusk
Mask: mask1.msk	X/Y: 260 / 420	light_evening
Mask: mask1.msk	X/Y: 160 / 420	light_off

Use this dialog to search for scripts in all project masks and scripts.

Note:
Upper/lower case is ignored in Search Object.

Match whole word only

If this box is activated the string to be searched for must match string specified under "**Script**". All matching strings will otherwise be found, irrespective of whether they are parts of a longer string or not.

Note:
Upper/lower case is ignored.

Result

This list shows all search results of the search criteria.

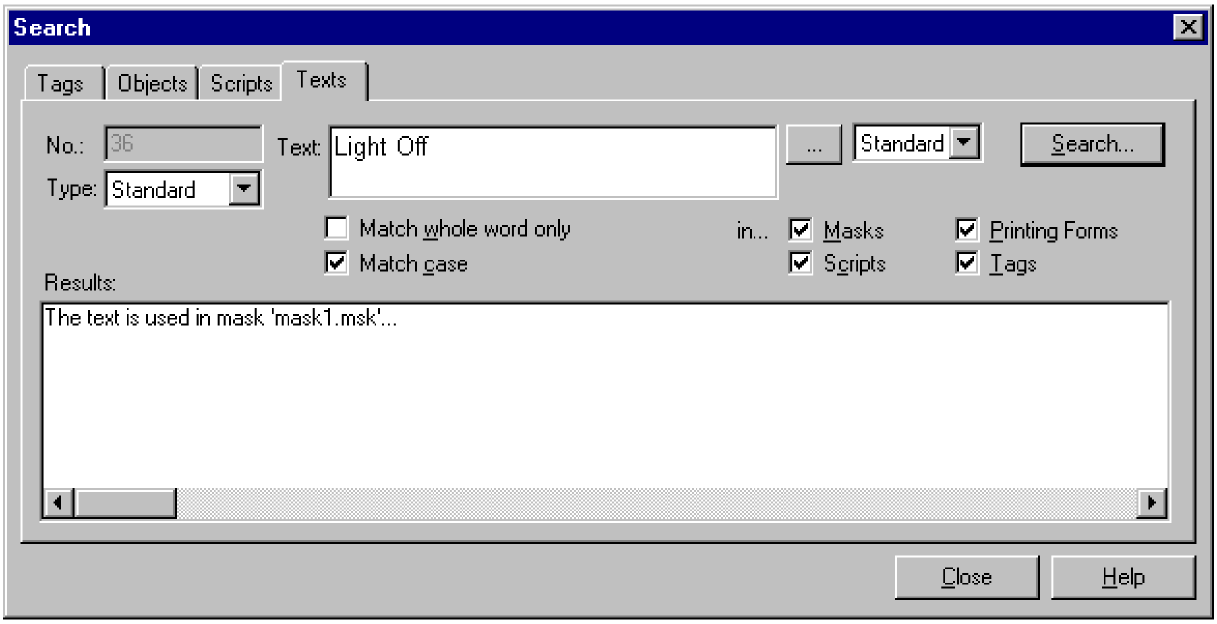
Note:
Double-clicking a list entry will directly open the mask or script where this object was found. The Properties dialog of this object will also be opened.

Search

Click this button to start the search operation.

See also Search Tags, Search Object, Search Text

5.4.5 Search Text



No.: 36

Type: Standard

Text: Light Off

Standard

☐ Match whole word only

☑ Match case

in... ☑ Masks ☑ Scripts ☑ Printing Forms ☑ Tags

Results:

The text is used in mask 'mask1.msk'...

Use the Search Texts dialog to search for a text in the Project. Different search options are provided in order to carry out selective text searches:

- Masks
- Print Forms
- Scripts
- Tags

If a text cannot be found in the selected objects, an appropriate message will be displayed in the "**Results**" window.

No.

Index Number that is assigned to each text. The index number can be entered directly if the 'Only Whole Words' option is selected.

Text

This field displays the text to be searched for in the project. The text can be entered directly if the Only Whole Words option is not selected. This makes it possible to search for a text segment.

Type

Defines the type of text to be searched for. The following text types can be selected:

- Standard Text
- Help Text
- Error Text

Match whole word only

If this option is selected, a search will be carried out for texts matching the string entered under "**Text**". Otherwise the search will find all matching texts even if the entered string matches only part of the text.

Match case

Activates a case-sensitive search.

Character set

Defines the font for the entry of a text.

...

Selection of a text from the text list. The selection depends on the selected **Type**.

Results

This window lists the search results from the specified data structures (**Masks**, **Printing Forms, Scripts and Tags**).

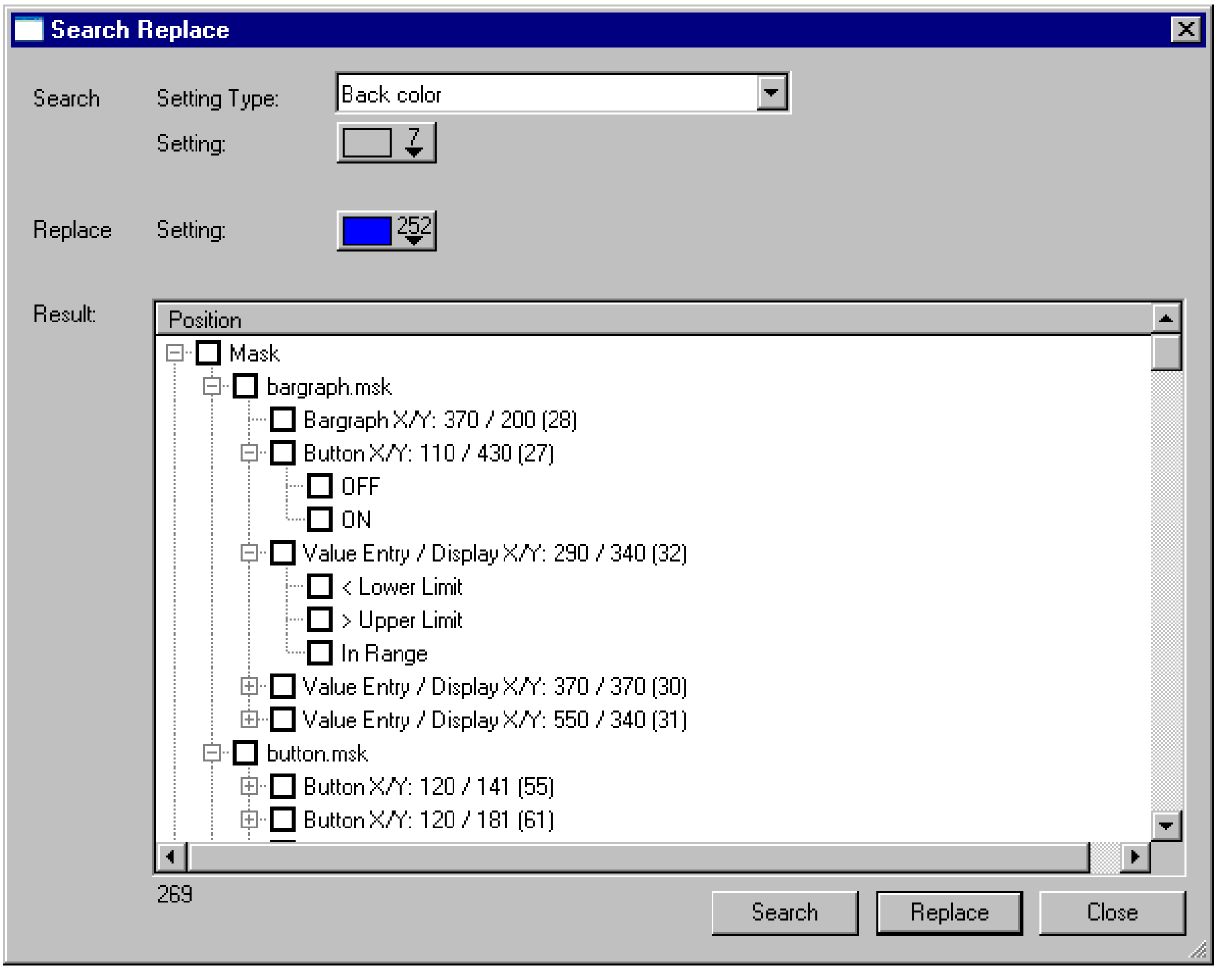
Search

Click this button to start the search operation.

See also Search Tags, Search Object , Search Script

5.5 Search Replace

5.5.1 Search Replace



Search Replace

Search Setting Type: Back color

Setting: 7

Replace Setting: 252

Result:

Position

- □ Mask
  - □ bargraph.msk
    - □ Bargraph X/Y: 370 / 200 (28)
    - □ Button X/Y: 110 / 430 (27)
      - □ OFF
      - □ ON
    - □ Value Entry / Display X/Y: 290 / 340 (32)
      - □ < Lower Limit
      - □ > Upper Limit
      - □ In Range
    - □ Value Entry / Display X/Y: 370 / 370 (30)
    - □ Value Entry / Display X/Y: 550 / 340 (31)
  - □ button.msk
    - □ Button X/Y: 120 / 141 (55)
    - □ Button X/Y: 120 / 181 (61)

269

Global search replace

This function can be called via the main menu under "Edit" in order to search for settings in the entire project.

Search replace in one or several masks

However, if the search for settings is only to be carried out in one or several masks, this function can be called via the context menu in the Mask Overview. This search will then only be carried out in the selected masks.

Search in selected objects

If this function is called via the context menu within a mask, the search will only be carried out in the selected objects.

Search Setting Type

This can be used to define the type of settings to be searched for.

Setting

Value or setting to be searched for.

Replace Setting

Replace the found settings with this value or setting.

Result

Shows a list of all the search results. The search results are structured according to location. The number of search results is displayed at the bottom left.

Search

Starts a new search for settings. The search results are shown in the results list.

Replace

All selected search results ☑ are replaced by the setting defined under "Replace Setting". All search results that were replaced are cleared from the results list.

Note:
Replaced settings cannot be undone.

See also Search

5.6 Goto

5.6.1 Goto

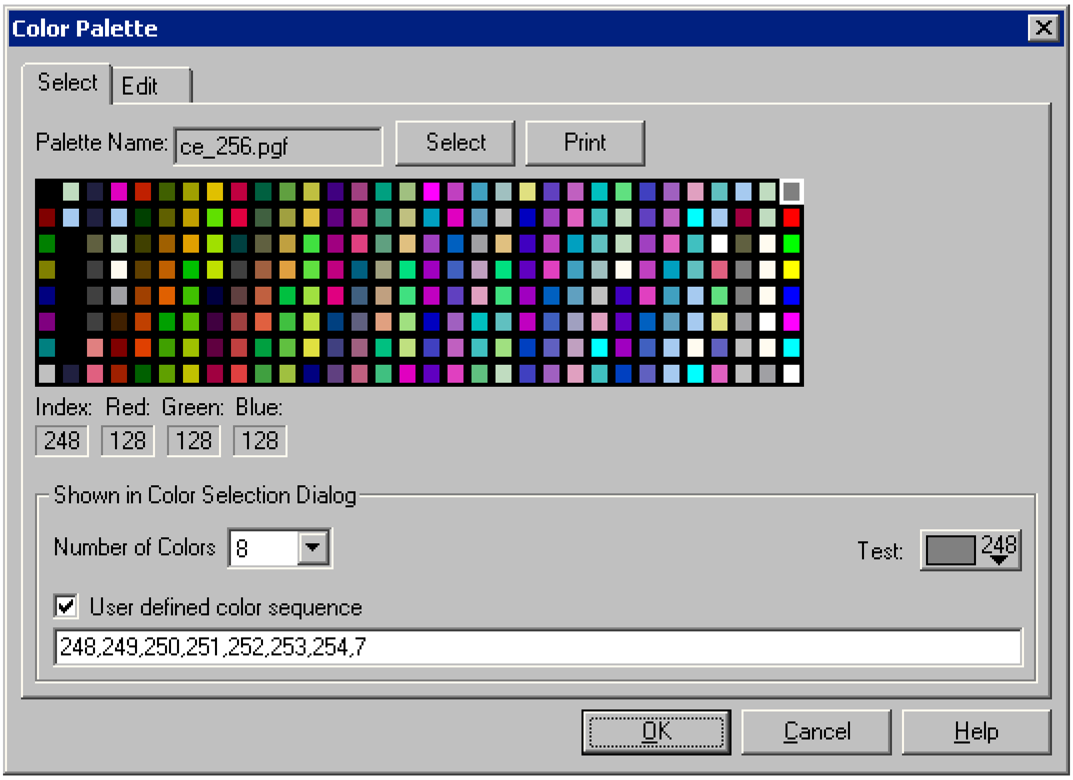
This command is only active with a mask change object. It can be used to follow the mask change in a project. If a destination mask was defined for a mask change object, it can be opened with this command. If this mask change object is already open, it is brought to the foreground as the active mask.

5.7 Color Palette

5.7.1 Color Palette

Use the Color Palette menu point in the Config menu to select and modify the color palette settings.

5.7.2 Select



Palette Name: ce_256.pgf

Index: 248 Red: 128 Green: 128 Blue: 128

Number of Colors: 8

Test: 248

☑ User defined color sequence

248,249,250,251,252,253,254,7

The dialog shows the currently active color palette.

Palette Name

Displays the current color palette.

Select

Selects a color palette file.

Print

Use this button to print the currently selected color palette. The zero-based index and the Red, Green and Blue color values of all colors are printed out.

Index

Zero-based color index of the currently selected color.

Red, Green, Blue

Red, Green, Blue color value of the currently selected color.

Shown in Color Selection Dialog...

Use the Color Selection dialog to specify the number of colors shown from the color palette.

Test

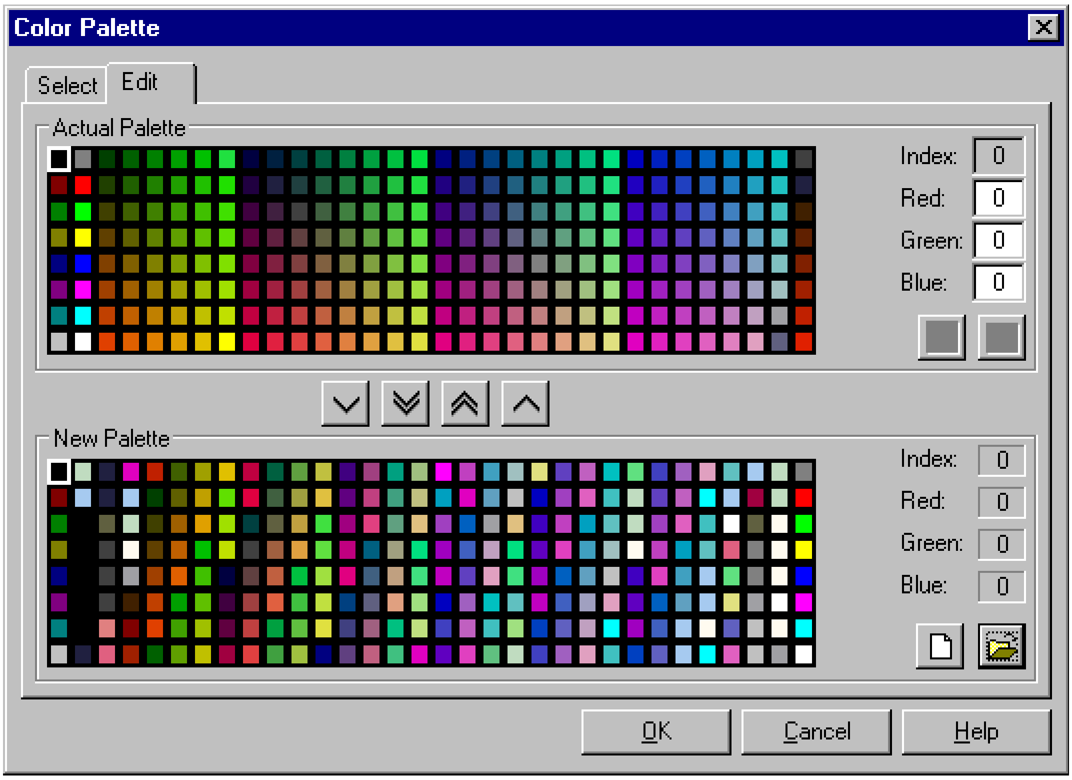
Click this button to call the Color Selection dialog in conjunction "**Shown in Color Selection Dialog...**"

User defined color sequnece

This setting enables the developer to change the number and order of colors in the color selection dialog. In the example selected, only the last eight colors of the palette can be selected in the project. This is useful, for example, if only the same eight colors are to be used in the project, in order to ensure a standard image.

5.7.3 Edit

Edit



Index: 0
Red: 0
Green: 0
Blue: 0

Index: 0
Red: 0
Green: 0
Blue: 0

A new color palette can only be opened if the current graphic card setting on the PC supports more than 256 colors.

See also New Palette

Actual Palette

Displays the current color palette.

Index

Zero-based color index of the currently selected color.

Red, Green, Blue

Red, Green, Blue color value of the currently selected color.

Changing the color values and then clicking the ▦ button will cause the current color to be adjusted accordingly.

See also **Setting new Color values**

Setting new Color values

▦ The value of the selected color will be adjusted according to the fields **Red, Green, Blue**.

This button is only available if at least one color value (red, green, blue) has been changed.

Save the actual Palette

💾 Save the current color palette file. This button is only available if at least one color has been changed.

New Palette

Displays an additional color palette to modify the current one.

Index

Zero-based color index of the currently selected color.

Red, Green, Blue

Red, Green and Blue color value of the currently selected color.

Creating a new Palette

🗋 Define a new color palette.

All entries are assigned the color white.

Open Palette

📂 Open a color palette file (*.pgf) or a create a color palette from a bitmap with 256 colors.

Button

˅ The selected color entry from the Actual Palette is copied to the selected color entry in the New Palette .

Button

⩔ All color entries from the Actual Palette are copied to the New Palette.

Button

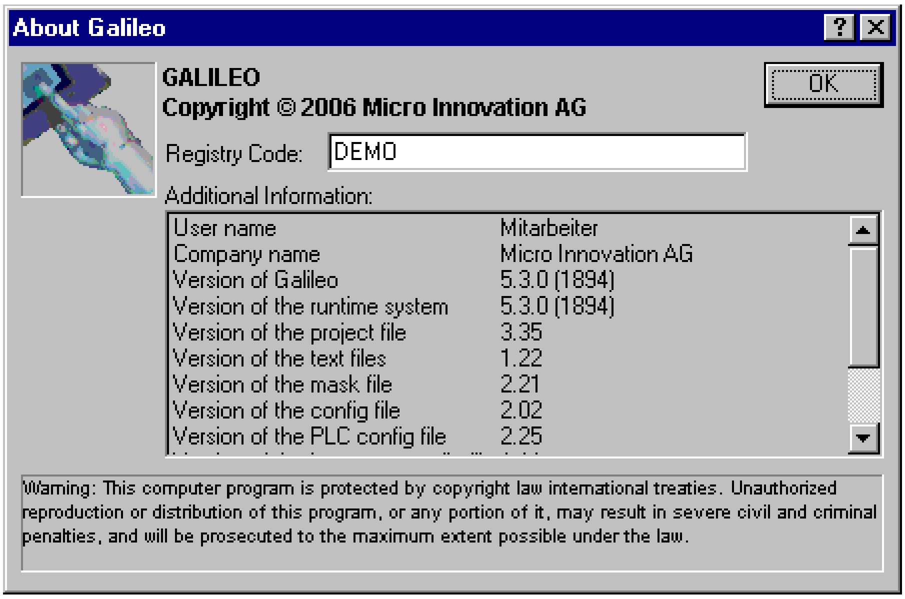
⩓ All color entries from the New Palette are copied to the Actual Palette.

Button

˄ The selected color entry from the New Palette is copied to the selected color entry in the Actual Palette.

5.8 About Galileo

5.8.1 About Galileo



GALILEO
Copyright © 2006 Micro Innovation AG

Registry Code: DEMO

Additional Information:

User name	Mitarbeiter
Company name	Micro Innovation AG
Version of Galileo	5.3.0 (1894)
Version of the runtime system	5.3.0 (1894)
Version of the project file	3.35
Version of the text files	1.22
Version of the mask file	2.21
Version of the config file	2.02
Version of the PLC config file	2.25

Warning: This computer program is protected by copyright law international treaties. Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.

This dialog shows the Galileo program version, the file versions of project files and configuration files, the compiler version for the panel data and the lowest permissible program version of GRS.

5.9 Release Notes

5.9.1 Release Notes

The version information describes the different versions of Galileo, Galileo Workshop GWS and the Galileo Runtime System GRS.

These Help topics can be started via the Help Release Notes menu. Version information is also called up when Galileo is started for the first time after installation.

6 Project Definitions

6.1 Designing a project

6.1.1 Designing a project

All of the menu points for editing a project are disabled if a project is not loaded.

A project consists of the following files:

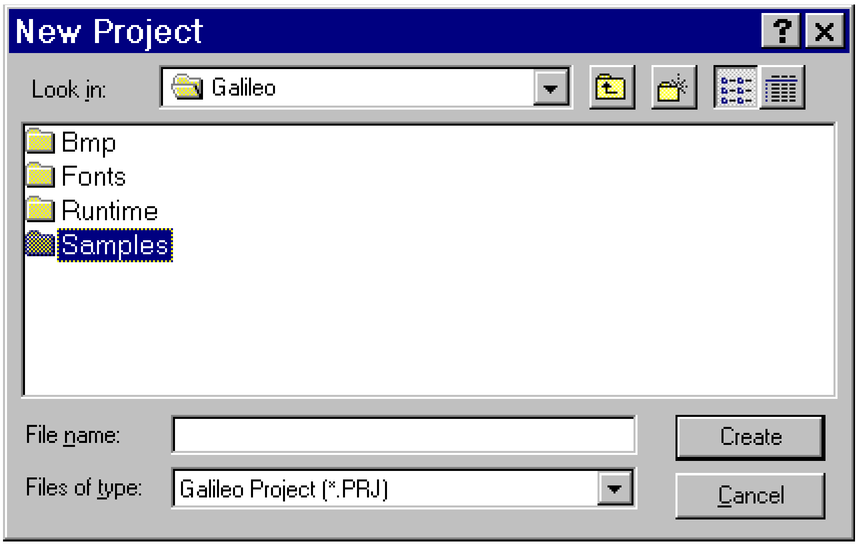
.PRJ	Project file - Tags - PLC definitions - Project settings
.BAK	Security copy of the project file.
._PR	Copy of project file
.PRH	Help file for the project file
.G00	Text data file (00 Original, 01..99 translations) - Standard texts (compiled: extension *.T00) - Help texts (compiled: extension *.H00) - Error texts (compiled: extension *.T00)
.MSK	Mask files (each mask consists of one file - Objects and their settings - Mask settings
.LNG	Language files - Language and corresponding character sets
.PWM	Password file - all user and password settings
.PGF	Color palette file
.FPR	List of printing forms
.REF **.ACT** **.TAB**	Data for the recipe object (only on panel)
.PRV	Printer settings for the serial driver on the MMI

.PCL	Printer settings for the PCL driver on the MMI
.BLT **.ILT**	List of used bitmaps
.INI	Only applies to CE panels. List with files of the CE components. See also INI file.

6.1.2 Creating a new project

A new project is created by clicking New in the Project menu.

The path and name of the project must then be entered in the subsequent dialog box. Click the Create button to create the project.

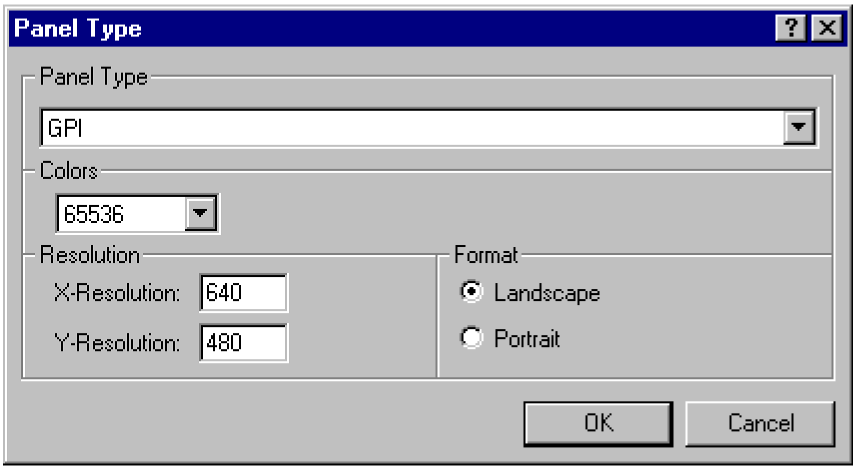


Look in: Galileo

File name:

Files of type: Galileo Project (*.PRJ)

You must then select the panel type for which the project is made. The settings can be changed during the design stage.



Panel Type: GPI

Colors: 65536

Resolution
X-Resolution: 640
Y-Resolution: 480

Format
● Landscape
○ Portrait

6.1.3 Open Project

Click Open in the Project menu to open an existing project. The file dialog that is called up can select the project path and name.

6.1.4 Close Project

The current project is closed, together with all opened masks. If a mask has not yet been saved, a prompt will ask whether you wish to save it.

6.1.5 Save Project

The currently loaded project is saved.

Note:
All files that belong to the project are saved including mask and text files.

6.1.6 Save Project As...

Click Save As to save a project under a different name or in a different directory. Enter the path and name of the project in the dialog box that will appear.

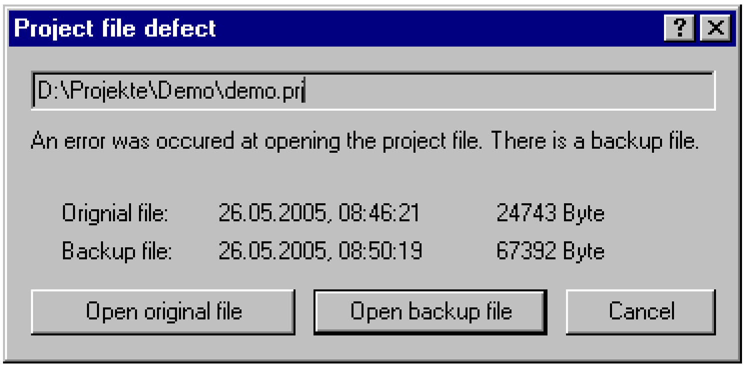
If a project with the same name is already present in the directory selected, a prompt will appear asking whether you wish to overwrite the project.

Note:
The Project Backup and Project Restore functions should be used for making backups and transferring the project to another PC, so that the printer driver file (*.prv) will also be transferred. The size of the backup is also much smaller since the entire project is saved in a compressed file.
All files belonging to the project will be copied, including mask and text files and the pictures used in them. The printer driver file (*.prv) is not copied.
Note:
All the files belonging to the project are copied, including mask and text files and the images used.

6.1.7 Restore Project File

Galileo saves the project file in a backup file every 10 minutes. This backup file <Projectname>.BAK allows you to restore a faulty project with only a maximum of 10 minutes project design work being lost.

The following dialog will appear if a project with a faulty or incorrectly closed project file is opened:



Project file defect

D:\Projekte\Demo\demo.prj

An error was occured at opening the project file. There is a backup file.

Orignial file: 26.05.2005, 08:46:21 24743 Byte
Backup file: 26.05.2005, 08:50:19 67392 Byte

Using the time/date and file size information you can now decide whether to load the original file or the backup file.

ATTENTION!
We normally recommend opening the backup file since this file was saved correctly.

6.2 Project Notes

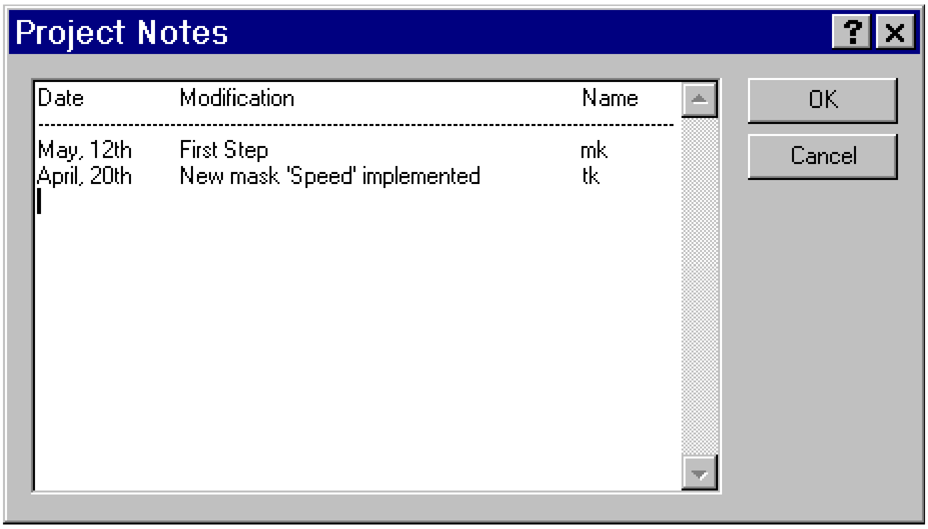
6.2.1 Project Notes

Use this dialog to enter any notes you wish to make on the project concerned.

Examples:

- Project journal
- Special notes or points concerning the project
- Messages for others working on the project

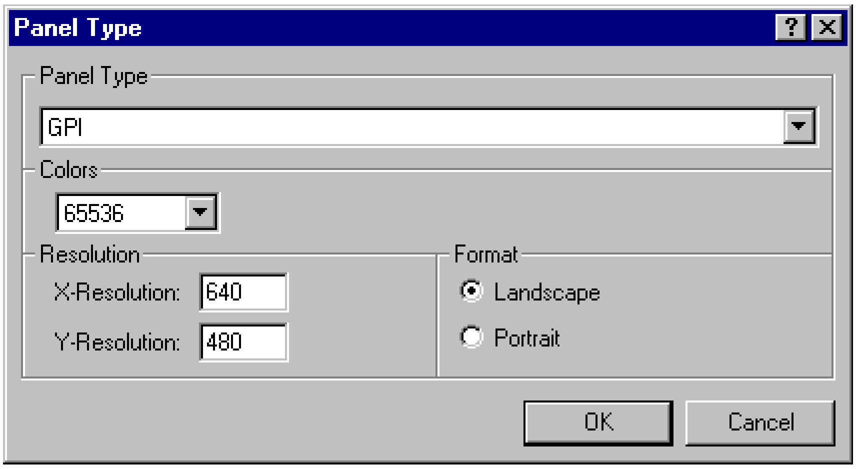
The length of this text is not restricted.



```
Date          Modification                              Name
-----------------------------------------------------------------
May, 12th     First Step                                mk
April, 20th   New mask 'Speed' implemented              tk
```

6.3 Selecting the MMI type

6.3.1 Selecting the MMI type



Panel Type: GPI

Colors: 65536

Resolution
X-Resolution: 640
Y-Resolution: 480

Format
● Landscape
○ Portrait

Panel Type

Selection of all available device types on which a GALILEO project can be loaded. The panel type can be changed if it has the same or a higher resolution.

Color

This is used to define the number of colors to be used for panel display.

Note:
The number of colors setting only applies to devices with the Windows (Desktop and CE) operating systems.

Resolution

X-Resolution

This field defines the horizontal resolution in pixels. This can be modified for certain device types.

Y resolution

This field defines the vertical resolution in pixels. This can be modified for certain device types.

Format

The format can also be set on some devices. In this case, the mask resolution is adjusted accordingly. The same format must be selected on the device.

Note:
The format setting only applies to devices with the Windows (Desktop and CE) operating systems.

6.4 Panel Printer Settings

6.4.1 Panel Printer Settings

A serial printer can be connected to the MMI devices via the PROG or SYSTEM interface. A parallel printer can be connected via the LPT interface or a network printer via the Ethernet interface.

The printer settings are contained in the text file (also called printer driver file) with the suffix "*.PRV" with ESC compatible printers and "*.PCL" with PCL compatible printers.

The printer driver file contains all settings for the printer. Other settings relating to 'Printing in Graphic Mode' can be modified directly in the file. Refer to chapter Printer Driver (*.prv) for further information on this printer driver.

Further information on connecting the printer is provided in chapter "Printing on the serial COM - Port" in GRS.HLP.

See also Print options (Overview), ESC compatible Printer, PCL compatible Printer

6.4.2 Print options (Overview)

The following print functions are possible with the MMI units:

Function:	**Description**
Error list printout	If the error list printout is activated, all errors will be printed directly when they occur, when they disappear and when they are acknowledged. Prints can either be executed in Text or Graphic mode. See also Error Window, Print Online All, Print Online Errors, Modify
Printing out the error history	Activate history to print out all errors listed there. Prints can either be executed in Text or Graphic mode. See also Error Window, Print History, Modify
Print form	Print forms allow the actual values of tags to be printed out online. The forms can be assigned any number of texts and tag values.

The print is carried out in Text mode.

See also Define Printing Form, Print Form No.xy

Print report

Print reports likewise allow the tag values to be printed out online. A print report can be created in the same way as a standard mask with the height and width defined by the user. This special mask is printed out in Graphic mode and cannot be displayed on the panel.

See also Print Report, Edit, Printer Driver (*.prv), Define Printing Form

Printing the current mask

The current mask displayed can be printed out in Graphic mode.

See also Print Mask, Print Mask (no header), Printer Driver (*.prv)

See also ESC compatible Printer, PCL compatible Printer

6.4.3 PCL compatible Printer

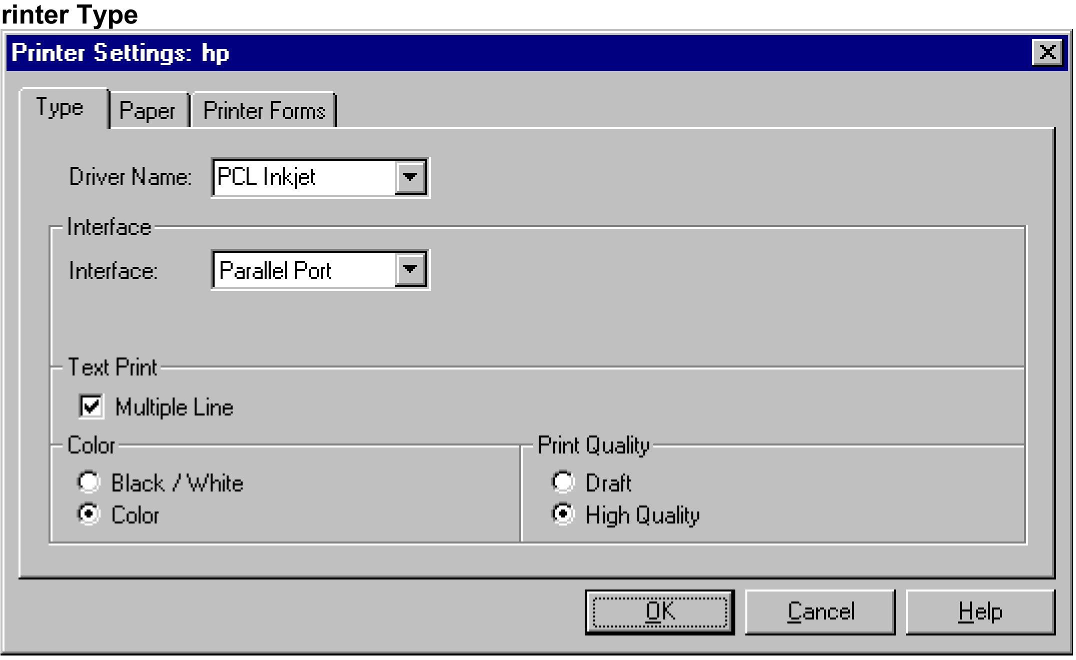
PCL compatible Printer

Note:
To use a PCL-compatible printer, the mode for the text printout must be set to 'graphic mode'.

The settings of the PCL-compatible driver are saved in the printer driver (*.pcl).

See also Printer Type , Printer Paper , Print forms

Printer Type



Printer Settings: hp

Type | Paper | Printer Forms

Driver Name: PCL Inkjet

Interface

Interface: Parallel Port

Text Print

☑ Multiple Line

Color

○ Black / White
● Color

Print Quality

○ Draft
● High Quality

Driver Name

Offers a selection of printer drivers.

Interface

The following interfaces are available for selection depending on the device:

- Serial port (System Port, COM1..x)
- Parallel port (LPTx)

- Ethernet

The baud rate must also be defined on the System port.

Ethernet

Printers can be connected to the Ethernet interface of the MICRO PANEL. The printer can either be addressed via an enabled printer of a Windows PC that is directly addressed via the RAW or LPR protocols.

Notes:

Currently, only printers that support the PCL protocol can be connected. PCL is a language developed by HP® which, however, is also supported by other printer manufacturers. If the following registry entry is set (not equal 0), the printer message 'Print job ... on queue ... has finished printing.' will not be displayed: [HKEY_LOCAL_MACHINE\Printers\NoNotifyWhenPrinted]

Sharing Printer

All printouts are carried out via the selected Windows PC. The printer is selected as follows:

Printer Selection	Example
\\<Network name of PC>\<Printer name>	\\PC-001\ColorPrinter

Enter the name of the PC under "Network name of PC". IP addresses are not supported. Enter the name of the enabled printer as "Printer name".

RAW or LPR Protocol

If the printer or printer server supports printing using the RAW or LPR protocols, the MICRO PANEL can activate the printer directly. This makes unnecessary to have a PC with the Windows operating system in the network.

Printer Selection	Example
RAW:<IP address or network name>**:**<port number>	RAW:192.168.1.1
LPR: <IP address or network name>**:**<port number>	LPR:192.168.1.1/P2

Select under "IP Address or Network Name" the appropriate IP address or network name of the printer or printer server. The port number or port name entry is optional, and port number 9100 or port name P1 is used if no entry is made. Refer here to the information provided with your printer or printer server.

Multiple Line

This option is only used in conjunction with print forms. If this option is selected, the text is printed on a line and the value with the unit of measure on another line in the form printout.

If this option is not selected, text, value and unit of measure are printed out on the same line.

See also #D08# Print Multiple Line

Color

Defines whether the printout is to be in color or black and white.

See also #D06# Color Mode

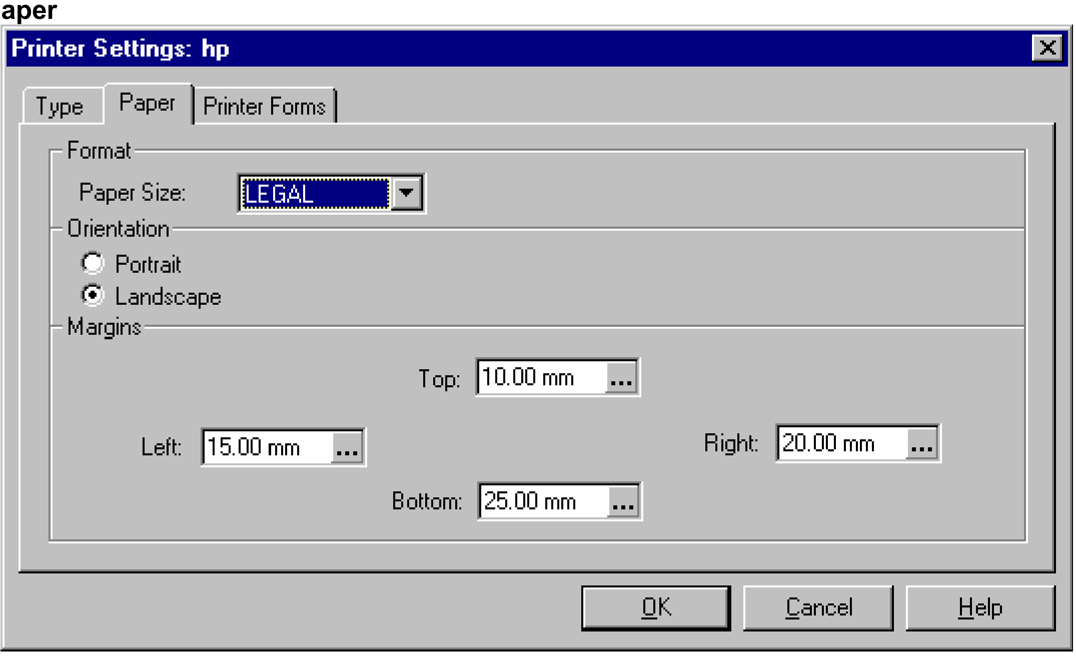
Print Quality

Defines the print quality of the printout.

See also #D07# Print Resolution

See also Paper , Printer Forms

Paper



Printer Settings: hp

Format

Paper Size: LEGAL

Orientation

○ Portrait

● Landscape

Margins

Top: 10.00 mm

Left: 15.00 mm

Right: 20.00 mm

Bottom: 25.00 mm

Format

Defines the paper size. The following sizes can be selected: A4, B4, B5, Legal, Letter.

See also #D00# Paper Size

Orientation

Defines sheet orientation.

See also #D01# Orientation

Margins

Defines the margins that are to be included in the print process. The unit of length for this can be selected.

See also #D02# Left Margin, #D03# Right Margin, #D04# Top Margin, #D05# Bottom Margin

See also Printer Type, Printer Forms

Printer Forms

bmc Printer druckerform.bmp}

Width of the text column

Width of the text column of print forms as a percentage of the sheet size.

See also Define Printing Form, #D09# Width of Text Column in chapter Printer Driver (*.pcl)

Width of the number column

Width of the value column of print forms as a percentage of the sheet size.

See also Define Printing Form, #D10# "Width of Number column" in the chapter Printer Driver (*.pcl)

Width of the unit/date column

Width of the unit of measure column of print forms as a percentage of the sheet size.

See also Define Printing Form, #D11# "Width of Unit column" in the chapter Printer Driver (*.pcl)

See also Printer Type, Printer Forms

Context Menu

bmc kontext menü drucker.bmp}

New

Creates a new printer.

Rename

Modifies the name of the printer.

Delete

Deletes the printer.

Copy

Copies the printer to the Clipboard.

Paste

Adds a printer into the project from the Clipboard.

Properties

Opens the Printer Settings of the printer.

Set Default Printer

Define printer as default printer. The default printer is the printer that is active after the panel has been started up.

Printer Driver (*.pcl)

Printer Driver (*.pcl)

The printer driver contains all the necessary settings and definitions for print jobs for the PLC-compatible printer on the MMI.

These print jobs can be started using function keys in the project or using a PLC connected to the MMI (see printer functions (printer)).

All printer driver files have the file suffix .PCL (e.g. HP.PCL) and are stored in the directory Galileo\Printer. All settings can be modified from Galileo.

Example of a printer driver for an HP-compatible printer:

```
// **************************************************
// *** PCL Printer Driver for HP Laserjet/Deskjet ***
// **************************************************
//
//
#D00#  "Paper size (0=A4, 1=B4, 2=B5, 3=Letter, 4=Legal)"    < 2 >
#D01#  "Orientation (0=Portrait, 1=Landscape)"               < 1 >
#D02#  "Left Margin in mm"                                   < 15 >
#D03#  "Right Margin in mm"                                  < 20 >
#D04#  "Top Margin in mm"                                    < 10 >
```

```
#D05#  "Bottom Margin in mm"                            < 25 >
#D06#  "Color mode (0=b/w 1=color)"                     < 0 >
#D07#  "Print resolution (0=draft, 1=high)"             < 0 >
#D08#  "Print Multiple line (0=No 1=Yes)"               < 1 >
#D09#  "Width of Text column [in %] in print form"      < 60 >
#D10#  "Width of Number column [in %] in print form"    < 25 >
#D11#  "Width of Unit column [in %] in print form"      < 15 >

#T00#  "Printer driver name (standard: PCL Inkjet)"   < PCL Inkjet >
#T01#  "Default Printer path (or e.g. LPT1: or COM1: 19200)" <
\\Desktop\hpdeskjet3820_usb >
```

see also Settings

Settings

Settings

#D00# Paper Size

#D01# Orientation

#D02# Left Margin

#D03# Right Margin

#D04# Top Margin

#D05# Bottom Margin

#D06# Color Mode

#D07# Print resolution

#D08# Print Multiple Line

#D09# Width of Text Column

#D10# Width of Number Column

#T00# Printer Driver Name

#T01# Default Printer Path

#D00# Paper Size

Defines the paper size

0=A4

1=B4

2=B5

3=Letter

4=Legal

#D01# Orientation

Defines the sheet orientation.

0=Portrait

1=Landscape

#D02# Left Margin

Defines the left margin in [mm] that the printer must allow for. The unit of length for this can be selected.

#D03# Right Margin

Defines the right margin in [mm] that the printer must allow for. The unit of length for this can be selected.

#D04# Top Margin

Defines the top margin in [mm] that the printer must allow for. The unit of length for this can be selected.

#D05# Bottom Margin

Defines the bottom margin in [mm] that the printer must allow for. The unit of length for this can be selected.

#D06# Color Mode

Defines whether the printout is to be in color or black and white.
0=black/white

1=color

#D07# Print Resolution

Defines the print quality of the printout.

0=Draft

1=Highest quality

#D08# Print Multiple Line

This setting can specify whether only the first line of multiple line texts is to be printed out. This can be useful, for example, with the online printout of error messages (display only one line, printout of several lines).

0=No

1=Yes

#D09# Width of Text Column

This setting is required for defining the text column width of a print form printout. This parameter is defined as a percentage of the paper width.

#D10# Width of Number Column

This setting is required for defining the value column width of a print form printout. This parameter is defined as a percentage of the paper width.

#D11# Width of Unit Column

This setting is required for defining the unit of measure column width of a print form printout. This parameter is defined as a percentage of the paper width.

#T00# Printer Driver Name

Defines the name of the printer driver. The name of the default printer driver is 'PCL Inkjet'.

#T01# Default Printer Path

This parameter is used in different ways, depending on the type of printer used:

Type	**Meaning of the parameter**	**Example**
Serial printer	Port and baud rate	COM1: 19200
Parallel Printer	Port	LPT1:
Network Printer	Network Path	\\Desktop\hpdeskjet3820_usb

6.4.4 ESC compatible Printer

ESC compatible Printer

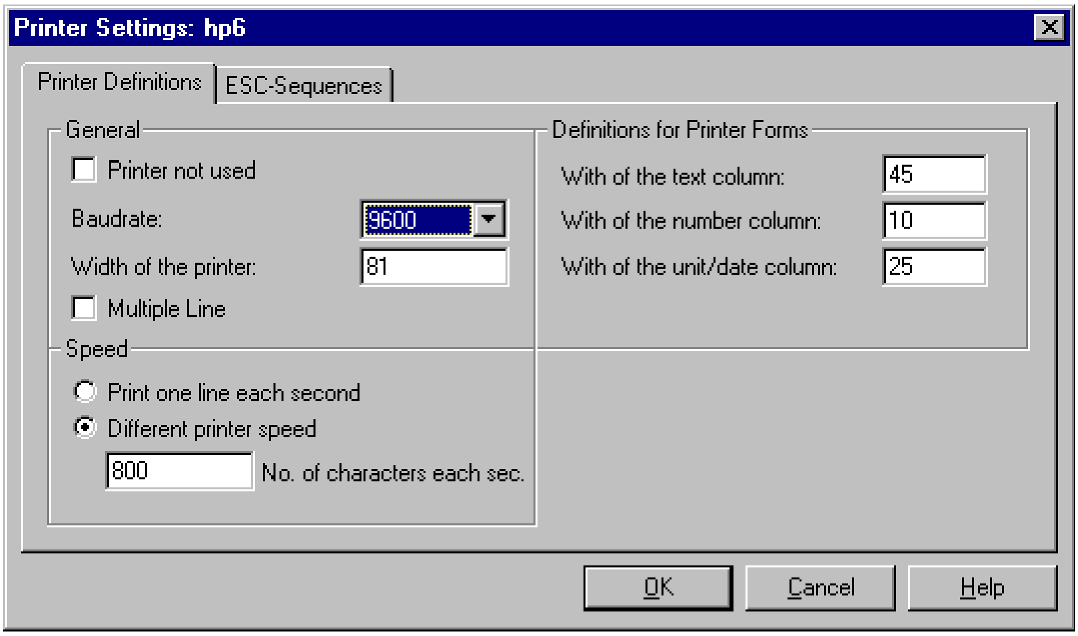
Different properties can be selected by using printer settings and ESC sequences. These properties are saved in the printer driver (*.prv) file.

The other settings for 'printing in graphic mode' can be modified directly in the file.

Further information on the printer drivers is provided in the section printer driver (*.prv).

Printer Settings

The following settings are transferred to the Printer Driver (*.prv) in sections #S00# to #S07#.



General

□ Printer not used

Baudrate: 9600

Width of the printer: 81

□ Multiple Line

Speed

○ Print one line each second

● Different printer speed

800 No. of characters each sec.

Definitions for Printer Forms

With of the text column: 45

With of the number column: 10

With of the unit/date column: 25

The interface parameters are as follows:

- Baudrate
- Data width: 8 Bit
- 1 Stop bit
- No parity
- Hardware handshake

Printer not used

Selecting this option means that the MMI does not use a printer and all entry fields are unavailable.

See also #S00# "Printer connected (0=Off/1=On)" of chapter Printer Driver (*.prv)

Baudrate

The baud rate of the serial connection between the printer and the panel.

See also #S01# "Printer Baud Rate" of chapter Printer Driver (*.prv)

Width of the printer

The entire printer width in the number of characters.

See also #S04# "Characters per line" of chapter Printer Driver (*.prv)

Multiple Line

This option is only used in conjunction with printer forms, allowing text to be printed on a form on one line and value entries with corresponding unit of measure on a separate line.

If this option is not selected, text, value entry and unit of measure will be printed out on the same line.

See also Define Printing Form, Print Form No.xy, #S03# "Print Multiple line (0=No 1=Yes)" of chapter Printer Driver (*.prv)

Width of the text column

Width of the text column of printer forms in number of characters.

See also Define Printing Form, #S05# "Text column width in print form" of chapter Printer Driver (*.prv)

Width of the number column

Width of the value column of printer forms in number of characters.

See also Define Printing Form, #S06# "Number column width in print form" of chapter Printer Driver (*.prv)

Width of the unit/date column

Width of the unit of measure column of printer forms in number of characters.

See also Define Printing Form, #S07# "Unit column width in print form" of chapter Printer Driver (*.prv)

Speed

Printer speed can be selected as follows:

See also #S02# "Print Speed (0= 1 line/s, >0= n char)" of chapter Printer Driver (*.prv)

Print one line each second
A line is printed every second. If the printer supports a faster speed, a user-defined number of characters per second should be specified.

Different printer speed
The specified number of characters is printed each second. Ensure that the printer can print the number of characters set. It should also be ensured that the set baud rate allows this speed.

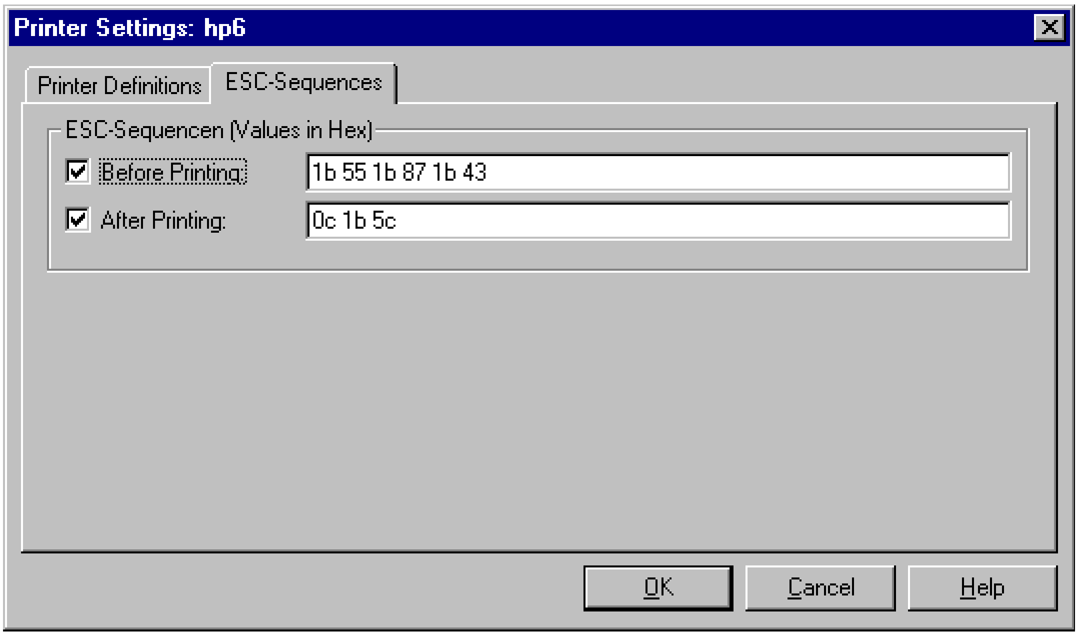
Check Settings

The printer width and different column widths are checked.

ESC Sequence

ESC sequences are printer control characters. Refer to the printer manual for the control characters required for the panel printer.

See also Printer Driver (*.prv)



☑ Before Printing: 1b 55 1b 87 1b 43

☑ After Printing: 0c 1b 5c

Printer

The selection list contains the printers already defined.

New

Add new printer.

The 'Name.INI', 'Name.PRE' and 'Name.PST' files are created after the name has been entered.

Save

Save the current settings under the selected printer name.

Save As...

The current settings are saved under a new printer name.

Set as Default

Set the current printer as the default printer.

Unless otherwise specified, the printer settings of the default printer will be transferred during a project download. See Download (Flash card) .

Before Printing

If this option is used, the specified control characters (ESC sequences) will be sent to the panel before every print job.

The control characters are given as hex values with a space between each character.

Refer to the relevant printer manual for the control characters of the printer used.

After Printing

If this option is used, the specified control characters (ESC sequences) will be sent to the panel after every print job.

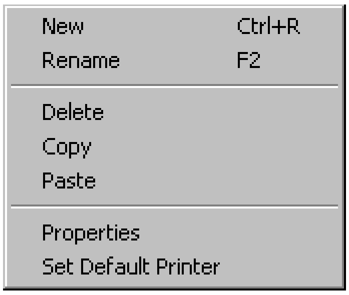
The control characters are given as hex values with a space between each character.

Refer to the relevant printer manual for the control characters of the printer used.

Check Syntax

This function checks the syntax of the ESC sequences specified.

Context Menu



New Ctrl+R
Rename F2
Delete
Copy
Paste
Properties
Set Default Printer

New

Creates a new printer.

Rename

Modifies the name of the printer.

Delete

Deletes the printer.

Copy

Copies the printer to the Clipboard.

Paste

Adds a printer into the project from the Clipboard.

Properties

Opens the Property dialog of the print form.

Set Default Printer

Only applies to PCL-compatible printers.

Printer Driver (*.prv)

Printer Driver (*.prv)

The printer driver contains all the settings and definitions required for the print jobs of the serial printer connected to the MMI. These print jobs can be started via function keys in the project or via a connected PLC on the MMI (see also Printer Functions). All printer driver files have the extension .PRV (e.g. EPSON.PRV) and are saved in the Galileo\Printer directory (see also Panel Printer Settings). The basic settings can be modified from Galileo if required.

Note:
Only special settings using ESC sequences enable the device to send individual characters as ANSI characters (according to ISO-8259-1). This applies, of course, only to printing in Text mode.

Several Escape sequences (ESC) can be defined for initiating graphical printouts. The command will not be executed if a sequence is not specified after the colon.

Example of a printer driver for an EPSON compatible printer:

```
// ***********************************************
// *** Printer Driver for EPSON Matrix Printer ***
// ***********************************************
//
// Description : S = General Settings
//               I = Initialization
//               G = Graphic Mode Settings
//               R = Print Resolutions
//               P = Printer Settings for Graphic Mode
//               U = Universal Commands
// All parameters (excl. Sxx, Rxx) must be written in Hexadecimal
// The text may not include the character ':'
//
#S00#  "Printer connected (0=Off/1=On)"       : 1
#S01#  "Printer Baudrate"                     : 19200
#S02#  "Print Speed (0= 1 line/s, >0= n char)": 80
#S03#  "Print Multiple line (0=No 1=Yes)"     : 0
#S04#  "Characters per line"                  : 75
#S05#  "Text column width in print form"      : 40
#S06#  "Number column width in print form"    : 10
#S07#  "Unit column width in print form"      : 25
#S08#  "Printer Timeout [ms]"                 : 5000
#I00#  "Send BEFORE printing"                 :
#I01#  "Send AFTER  printing"                 :
#I02#  "Printer Init"                         : 1B 40 1B 35 00
#I03#  "Printer Reset"                        :
#I04#  "Page Init Graphic Mode"               : 1B 6C 03 1B 41 08
#I05#  "Form Feed"                            : 0C
#I06#  "Line Feed"                            : 0A
#I07#  "Carriage Return"                      : 0D
#I08#  "Line Space text mode printing"        : 1B 41 08
#I09#  "Line Space graphic text printing"     :
#I10#  "Line Space graphic image printing"    :
#I11#  "Page Init Text Mode"                  :
#G00#  "Graphic End"                          : 0D
#G01#  "Graphic Init (180DPI,1024 Pixel)"     : 1B 2A 02 00 04
#G02#  "Graphic Init (120DPI, 640 Pixel)"     : 1B 2A 04 80 02
#G03#  "Graphic Init ( 60DPI, 320 Pixel)"     : 1B 2A 00 40 01
#R01#  "Print Resolution (DPI,Pixel) of #G01)": 180 1024
```

```
#R02#  "Print Resolution (DPI,Pixel) of #G02)": 120 640
#R03#  "Print Resolution (DPI,Pixel) of #G03)": 60 320
#P00#  "Send Data in horizontal lines (1=Yes)": 0
#P01#  "Data bits per pixel (1..8)"           : 1
#P02#  "Color index printed black"            : 00 09 0A 0B 0C 0D
#P03#  "Graphic Mode supported (1=Yes)"       : 1
```

Command Sequence

The following printer command sequences are provided for different special functions.

Special Function	Command from PRV-file
Print ESC Sequence	None
Print Form Feed	#I05#
Print Form No. xy	#I11# #I08# #I00# From entries #07# #06# #I01#
Print History Textmode Print Online Textmode	#I11# #I08# #I00# #I03# #I02# #I11# #I08# for each entry: at end #07# #06# #I01#
Print History Grafikmode Print Online Grafikmode	#I11# #I08# #I00# #I03# #I02# #I04# #I09# for each entry: #I09# #I08# #G01,02 or 03 [Data] #G00## #I09# #I06# #I01#
Print Mask Print Report	#I11# #I08# #I00# #I03# #I02# #I04# #I10# for each row of pixel: #I09# #I08# #G01,02 or 03 [Data] #G00##
Print Mask (no header)	#I03# #I02# #I04# #I10# for each row of pixel: #I09# #I08# #G01,02 or 03 [Data] #G00##

General Settings

General Settings

- #S00# "Printer connected (0->Off/1->On)"
- #S01# "Printer Baud Rate"
- #S02# "Print Speed (0 -> 1 line/s, >0 -> n char)"
- #S03# "Print Multiple line (0=No 1=Yes)"
- #S04# "Characters per line"
- #S05# "Text column width in print form"
- #S06# "Number column width in print form"
- #S07# "Unit column width in print form"
- #S08# "Printer Timeout [ms]"

#S00# "Printer connected (0->Off/1->On)"

This setting defines whether a printer is connected to the MMI or not. If '0' is specified, the MMI does not check during startup for the presence of a connected printer. If '1' is specified, an error message on the MMI will appear during the MMI startup if a printer is not detected on the SYSTEM PORT or if the printer is not ready.

This setting can be modified from Galileo (see also Panel Printer Settings).

#S01# "Printer Baud Rate"

This setting defines the baud rate of the print job. As high a baud rate as possible should be specified.

This setting can be modified from Galileo (see also Panel Printer Settings).

#S02# "Print Speed (0 -> 1 line/s, >0 -> n char)"

This setting defines the print speed of the printer in Text mode. This setting has no meaning with print jobs in full Graphic mode (e.g. mask printouts). If '0' is specified, the MMI will print one text line per second. If the value specified is higher than 0, the print speed is based on the following equation:

Lines per second = Print width [characters/line] / Printer speed [Characters/Sec].

This setting can be modified from Galileo (see also Panel Printer Settings).

#S03# "Print Multiple line (0 ->No 1->Yes)"

This setting defines whether multiple line texts are printed out completely or only the first line. This may, for example, be useful with the online printout of error messages (display only one line, printout several lines).

This setting can be modified from Galileo (see also Panel Printer Settings).

#S04# "Characters per line"

This setting defines the print width of the printer in 'characters per line'.

This setting can be modified from Galileo (see also Panel Printer Settings).

#S05# "Text column width in print form"

This setting is used to specify the width of text columns in a printed form.

This setting can be modified from Galileo (see also Panel Printer Settings).

#S06# "Number column width in print form"

This setting is used to specify the width of value columns in a printed form.

This setting can be modified from Galileo (see also Panel Printer Settings).

#S07# "Unit column width in print form"

This setting is used to specify the width of unit of measure columns in a printed form.

This setting can be modified from Galileo (see also Panel Printer Settings).

#S08# "Printer Timeout [ms]"

This setting defines the maximum wait time that an MMI should wait for a printer enable signal (e.g. with some printers it may be some time before the printer is ready after a form feed).

The hardware handshake lines must therefore be connected.

If there are no communication problems, this value should not be changed.

Initialization

Initialization

#I00# "Send BEFORE printing"

#I01# "Send AFTER printing"

#I02# "Printer Init"

#I03# "Printer Reset"

#I04# "Page Init Graphic Mode"

#I05# "Form Feed"

#I06# "Line Feed"

#I07# "Carriage Return"

#I08# "Line Space for text mode printing"

#I09# "Line Space graphic text printing"

#I10# "Line Space graphic image printing"

#I11# "Page Init Text Mode"

#I00# "Send BEFORE printing"

This can be used for ESC sequences for the printer that are to be sent before each print job.

This setting can be modified from Galileo (see also ESC Sequence in chapter ESC Sequence).

#I01# "Send AFTER printing"

This can be used for ESC sequences for the printer that are to be sent after each print job.

This setting can be modified from Galileo (see also ESC Sequence in chapter ESC Sequence).

#I02# "Printer Init"

This can be used for ESC sequences for initializing the printer and making it ready for operation.

#I03# "Printer Reset"

This can be used for ESC sequences required for resetting the printer.

#I04# "Page Init Graphic Mode"

This can be used for ESC sequences for the printer, to specify the page settings for fully graphical printouts.

#I05# "Form Feed"

This can be used for ESC sequences starting a form feed on the printer.

#I06# "Line Feed"

This can be used for ESC sequences starting a line feed on the printer.

#I07# "Carriage Return"

This can be used for ESC sequences starting a carriage return on the printer.

#I08# "Line Space for text mode printing"

This can be used for ESC sequences for the printer, which set the line space in Text mode.

#I09# "Line Space graphic text printing"

This can be used for ESC sequences for the printer, which set the line space for text in Graphic mode.

With many printers an entry is not necessary here since the line feed is determined automatically by the Graphic Mode.

#I10# "Line Space graphic image printing"

This can be used for ESC sequences for the printer, which set the line space for picture printouts in Graphic mode.

With many printers an entry is not necessary here since the line feed is determined automatically by the Graphic Mode.

#I11# "Page Init Text Mode"

This can be used for ESC sequences for the printer to specify the page settings for printouts in Text mode.

Graphic Mode Settings

Graphic Mode Settings

The standard settings are #G00#, #G01#, #G02# and #G03#. Other resolutions are possible with #G04#, #G05# to #G16#. For each setting #Gxy# the corresponding setting #Rxy# in chapter Print Resolutions must be made.

#G00# "Graphic End"

This can be used for ESC sequences which deactivate Graphic mode on the printer.

#G01# "Graphic Init (180DPI,1024 Pixel)"

This can be used for ESC sequences for the printer, which set the printer in Graphic mode with the appropriate resolution (according to the setting under #R01# "Print Resolution (DPI, Pixel) of #G01)").

#G02# "Graphic Init (120DPI, 640 Pixel)"

This can be used for ESC sequences for the printer, which set the printer in Graphic mode with the appropriate resolution (according to the setting under #R02# "Print Resolution (DPI,Pixel) of #G02)").

#G03# "Graphic Init (60DPI, 320 Pixel)"

This can be used for ESC sequences for the printer, which set the printer in Graphic mode with the appropriate resolution (according to the setting under #R03# "Print Resolution (DPI,Pixel) of #G03)").

Print Resolutions

Print Resolutions

The standard settings are #R01#, #R02# and #R03#. Other resolutions are possible with #R04#, #R05# to #R16#. For each setting #Rxy# the corresponding setting #Gxy# in chapter Graphic Mode Settings must be made.

#R01# "Print Resolution (DPI, Pixel) of #G01)"

This defines the print resolution and dots per inch for printing pictures at a width of 320 pixels. The width (320 pixels) should not be changed. The dots per inch setting (DPI) determines the physical width (e.g. 320 pixel at 60 DPI = 5.33 inch/13.5 cm print width).

This entry must correspond to the ESC sequence defined under #G01# "Graphic Init (180DPI,1024 Pixel)".

#R02# "Print Resolution (DPI,Pixel) of #G02)"

This defines the print resolution and dots per inch for printing pictures at a width of 640 pixels. The width (640 pixels) should not be changed. The dots per inch setting (DPI) determines the physical width (e.g. 640 pixel at 100 DPI = 6.4 inch/16.25 cm print width).

This entry must correspond to the ESC sequence defined under #G02# "Graphic Init (120DPI, 640 Pixel)".

#R03# "Print Resolution (DPI,Pixel) of #G03)"

This defines the print resolution and dots per inch for printing pictures at a width of 1024 pixels. The width (1024 pixels) should not be changed. The dots per inch setting (DPI) determines the physical width (e.g. 1024 pixel at 150 DPI = 6.82 inch/17.34 cm print width).

This entry must correspond to the ESC sequence defined under #G03# "Graphic Init (60DPI, 320 Pixel)".

Printer Settings for Graphic Mode

Printer Settings for Graphic Mode

#P00# "Send Data in horizontal lines (1=Yes)"

#P01# "Data bits per pixel (1..8)

#P02# "Color index printed black

#P03# "Graphic Mode supported (1=Yes)

#P00# "Send Data in horizontal lines (1 -> Yes)"

A '1' set causes the graphic data of each line to be sent pixel by pixel to the printer. This is the operating mode used by most laser and ink jet printers.

A '0' causes 8 pixels arranged vertically to be sent to the printer. This is the operating mode used by most dot matrix printers.

Only 8 pin dot matrix operation is supported.

#P01# "Data bits per pixel (1..8)

This setting defines the number of data bits for each pixel.

Currently only monochrome printing is supported. Consequently a '1' must always be set here (1 bit per pixel).

#P02# "Color index printed black

Since only monochrome printing is possible, the printer driver must also specify which colors to print (black) and which colors not to print (white).

For this the color values (Index) to be printed are defined.

The indices of individual colors are shown in Galileo in Color Selection (e.g. dark blue has index 4, yellow index 11).

#P03# "Graphic Mode supported (1 -> Yes)

This setting defines whether the connected printer is at all capable of full graphics printing.

If '0' is set here, full graphics printing will not start.

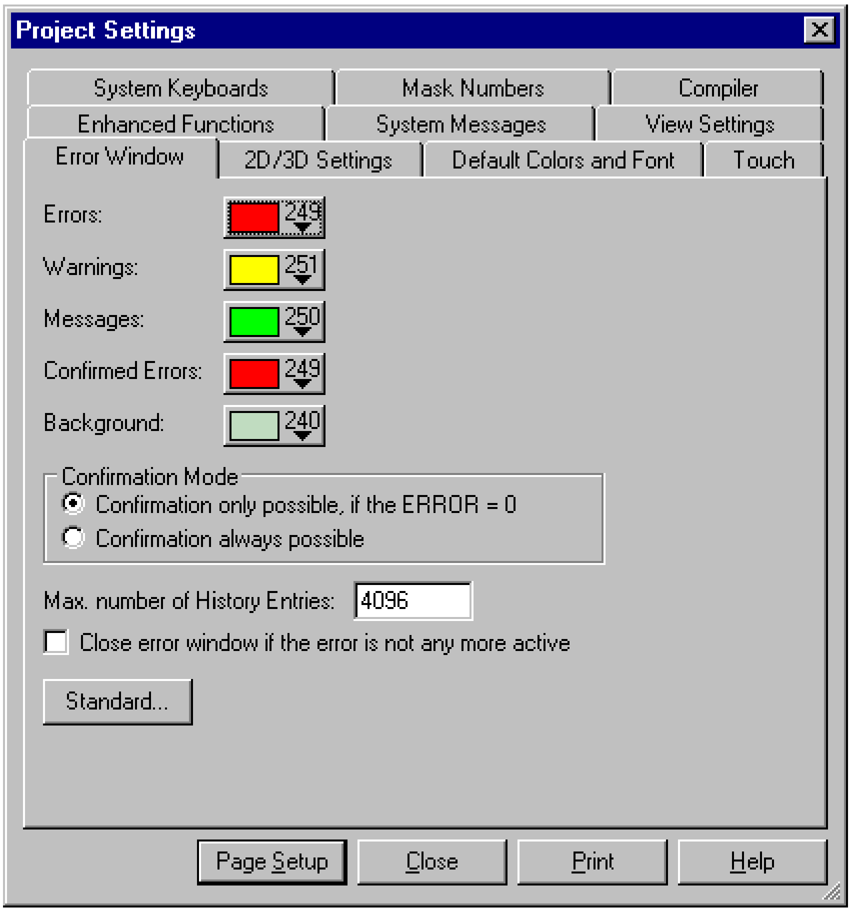
6.5 Project Settings

6.5.1 Project Settings

The settings in this dialog box concern the entire project and therefore apply to all masks.

It is also possible to print out a table showing all these settings ("Print").

6.5.2 Error Window



Errors: 🟥 249

Warnings: 🟨 251

Messages: 🟩 250

Confirmed Errors: 🟥 249

Background: 240

Confirmation Mode

● Confirmation only possible, if the ERROR = 0

○ Confirmation always possible

Max. number of History Entries: 4096

□ Close error window if the error is not any more active

These settings concern the colors of the Error window and the texts that they contain.

See also Error Window, Error confirm, Error confirm all

Errors and Confirmation Mode

Color of the error texts in the Error Window. Error texts must be confirmed (acknowledged) manually in order to remove them from the Error window. The occurrence, removal and confirmation of errors are logged in the history (see Show Sys. History On/Off). Galileo supports the two different confirmation modes:

- **Confirmation only possible, if the ERROR = 0:** Only those errors can be confirmed (acknowledged) involving tags with the status 0.
- **Confirmation always possible:** Those errors involving tags with the status 0 or 1 can be acknowledged. The error tag is then removed from the error window and is reset immediately to "0".

The error tags with the "Confirmation necessary" attributes are kept in the Error Window until they have been acknowledged and the error tag is reset to "0". Use the "**Confirmed Errors**" button to select the color of the confirmed errors.

Error

Color of the error tags of the Error message type within the Error Window.

Warnings

Color of the error tags of the Warnings message type within the Error Window

Messages

Color of the error tags of the Messages type within the Error Window

Background

Background color of the Error Window.

Max. number of History Entries

Defines the maximum number of errors that can be stored in the history. If more errors, warnings or messages occur than the number defined here, the oldest entries will be permanently deleted.

Close error window if the error is not any more active

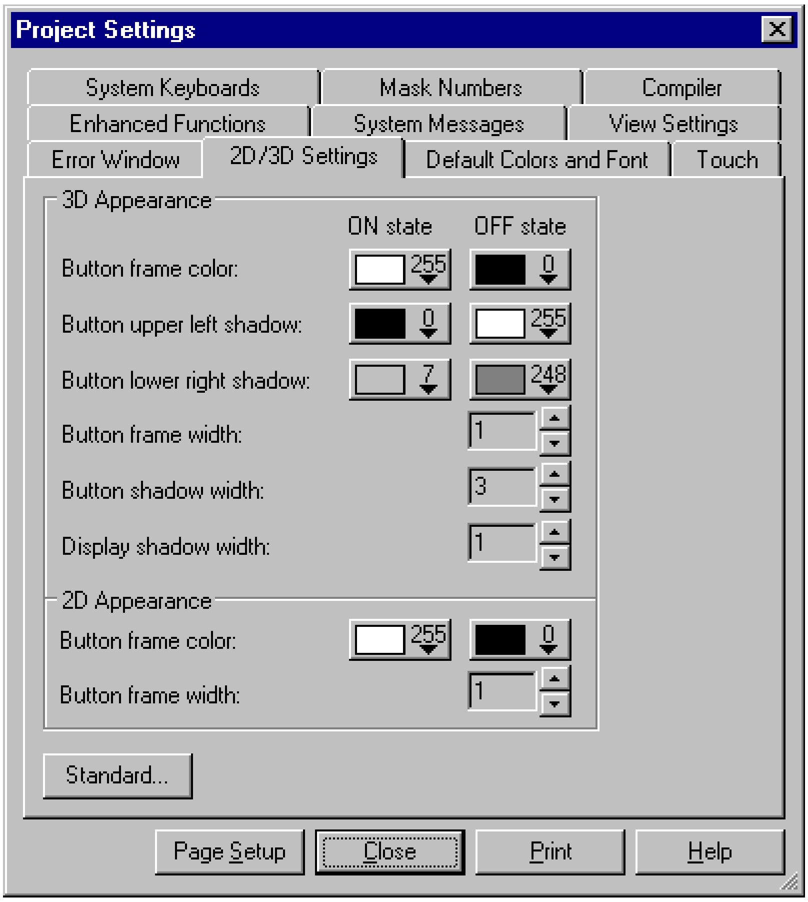
Defines the behavior of the Help windows in conjunction with the error windows.

If this option is activated and the Help window displayed for an active error, the Help window will close automatically as soon as the error is inactive. Otherwise the Help window will remain open until it is closed manually.

Standard...

Resets the values to the default values.

6.5.3 2D/3D Settings



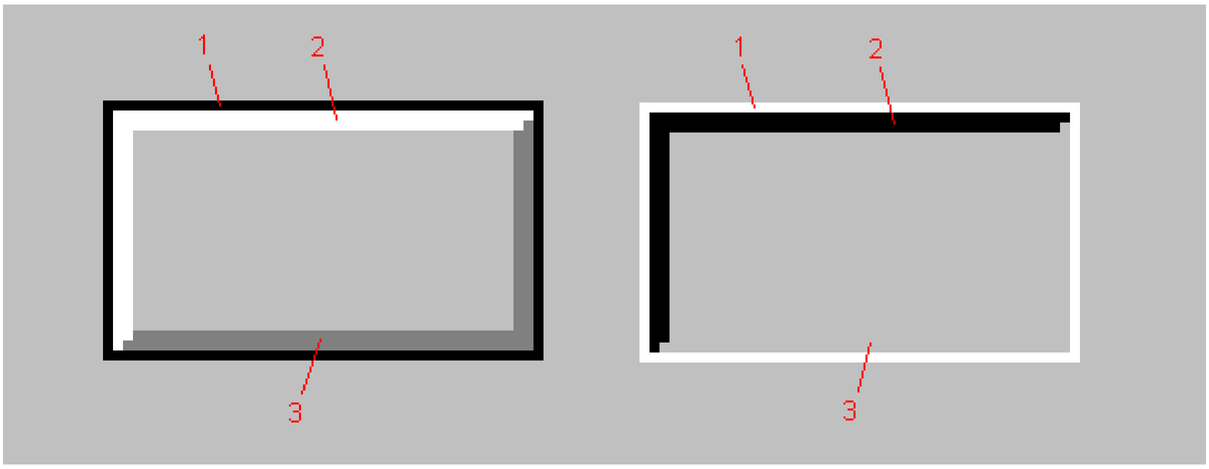
3D Appearance

	ON state	OFF state
Button frame color:	255	0
Button upper left shadow:	0	255
Button lower right shadow:	7	248
Button frame width:		1
Button shadow width:		3
Display shadow width:		1

2D Appearance

Button frame color:	255	0
Button frame width:		1

3D



Button frame color

(1) Frame color of the outer button frame.

Button upper left shadow

(2) Color of the upper and left frame of a 3D button or 3D display.

Button lower right shadow

(3) Color of the bottom and right frame of a 3D button or 3D display.

Button frame width

(1) Frame width of the outer button frame.

Button shadow width

(2) and (3) width of the shadows for buttons.

Display shadow width

(2) and (3) width of the shadows for displays.

2D

Button frame color

Frame color of the button or display frame.

Button frame width

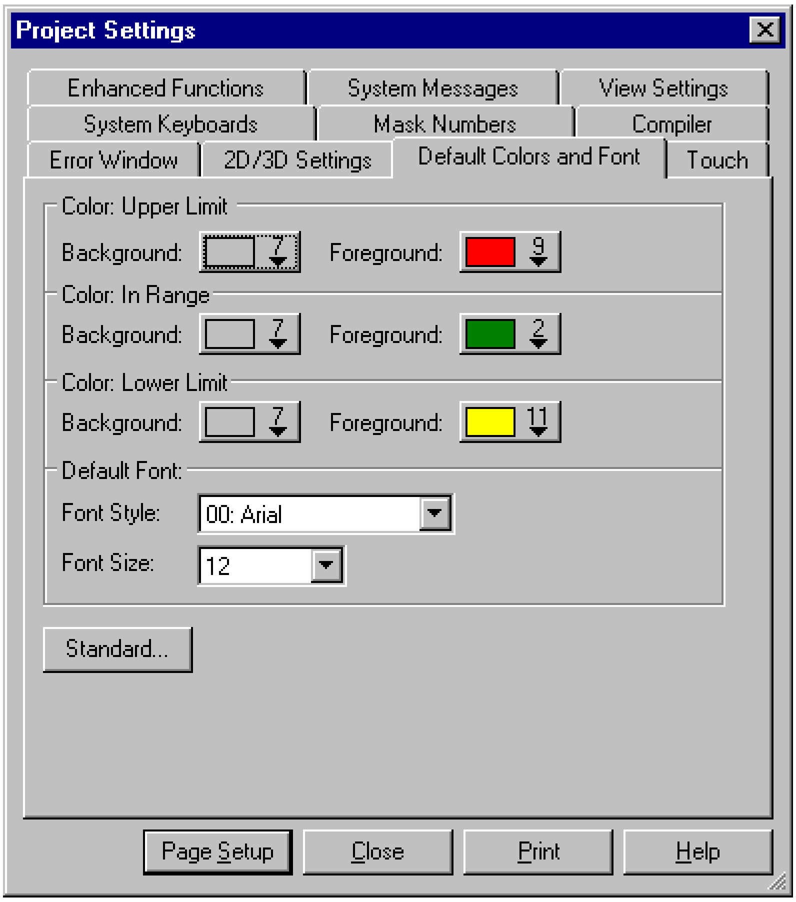
Frame width of the outer button or display frame.

Standard...

Resets the values to the default values.

See also Color Selection, Touch zone frames and attributes

6.5.4 Default color and font



Color: Upper Limit

Background: 7 Foreground: 9

Color: In Range

Background: 7 Foreground: 2

Color: Lower Limit

Background: 7 Foreground: 11

Default Font:

Font Style: 00: Arial

Font Size: 12

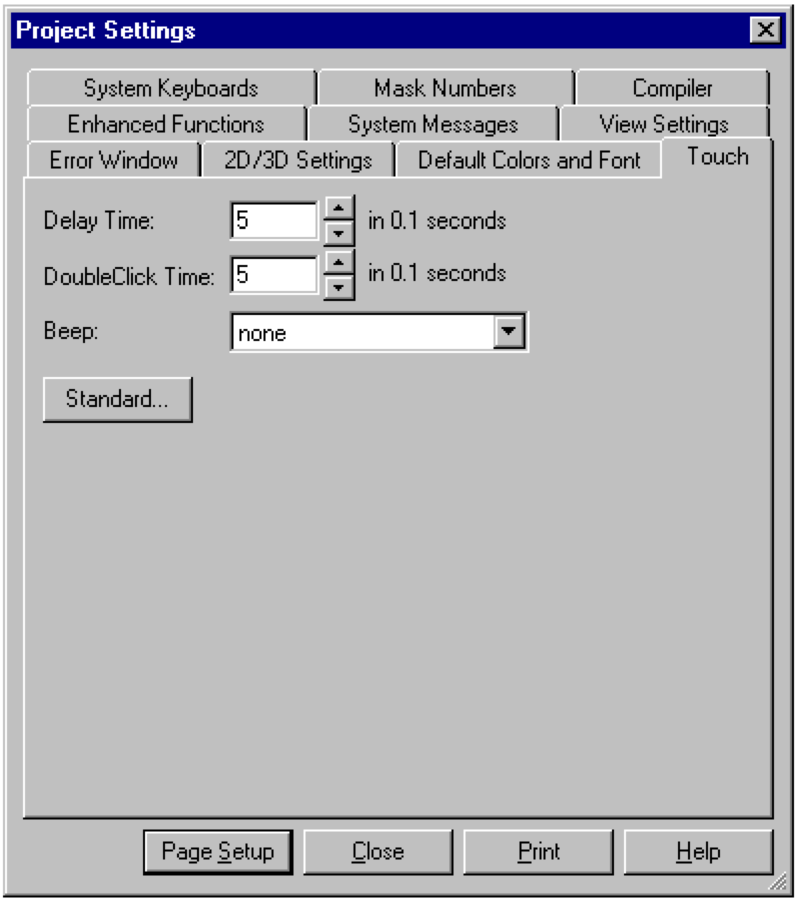
A default color setting can be used for displaying values in the Value Entry / Display and Bargraph objects. Each newly defined object uses this default setting.

The standard font is used with all objects that have been assigned a default font. Naturally, a user-defined color setting or font can be selected for an object as required. Each newly defined object uses these default settings.

Standard...

Resets the values to the default values.

6.5.5 Touch



Delay Time: 5 in 0.1 seconds

DoubleClick Time: 5 in 0.1 seconds

Beep: none

Delay Time

If a touch zone uses the delay attribute ("Delay") it only reacts n*100 ms after being touched.

DoubleClick Time

If a touch zones uses the "DoubleClick" attribute, the function is not executed unless a second touch operation is made on the same object within n*100 ms.

Beep

An acoustic signal is output when a touch zone is operated.

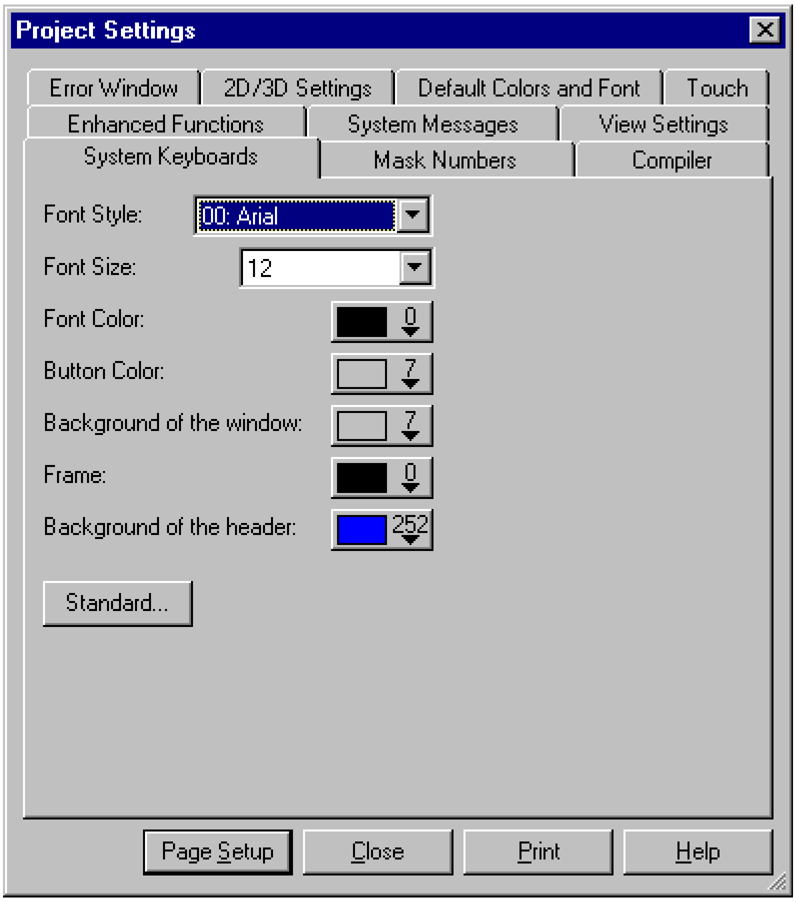
The following options can be selected:

- No acoustic signal
- Beep on touch zone entry
- Beep on touch zone exit
- Beep on entry and exit
- Beep on function execution

Standard...

Resets the values to the default values.

6.5.6 System Keyboards



Font Style: 00: Arial

Font Size: 12

Font Color: 0

Button Color: 7

Background of the window: 7

Frame: 0

Background of the header: 252

System colors define the colors of standard windows and buttons contained in the GRS firmware (e.g. numeric keyboard, system information ...).

Font Style

Font of the button inscriptions of the standard keyboard and windows appearing in the GRS firmware (e.g. numeric keyboard, system information, ...).

Font Size

Font size of the button inscriptions of the standard keyboard contained in the GRS firmware.

Font Color

Font colors of the button inscriptions of standard keyboards contained in the GRS firmware.

Button Color

Color of the buttons of standard keyboards contained in the GRS firmware.

Background of the window

Background of the window defines the color of a system window. System windows are windows generated by the GRS firmware.

Frame

Frame color of a system window

This is also the font color for the display of limit values in numeric keyboards.

Background of the header

Background color for the title

This is also the background color of the display of limit values in numeric keyboards. The Font color for the title is the same as the font color of the button inscription (Keyboards).

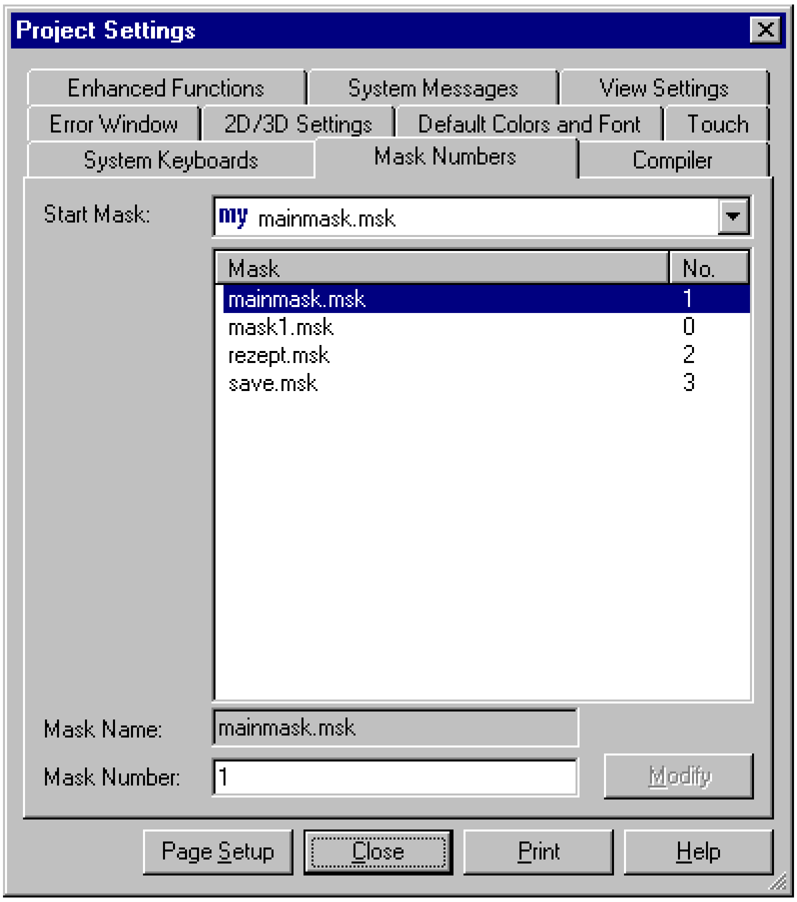
When using a 2D button or display the frame color is used that is defined under Button frame color in the OFF state. When using a 3D button or display, the following colors are used.

See also Touch zone frames and attributes

Standard...

Resets the values to the default values.

6.5.7 Mask Numbers



Start Mask: mainmask.msk

Mask	No.
mainmask.msk	1
mask1.msk	0
rezept.msk	2
save.msk	3

Mask Name: mainmask.msk

Mask Number: 1

Each mask name is automatically assigned a mask number (ID) when it inserted in a project. A project cannot contain more than one mask with the same number.

This number is used for initiating a mask change from the PLC or for informing the PLC of the currently active mask in the MMI.

See also Mask Change, Initiating functions from the PLC, "Control Data Block" and "Status data block" in GRS.HLP

Start Mask

For selecting the mask that is to appear first of all when the device is switched on.

Mask Name

Name of the mask selected from the list above this field.

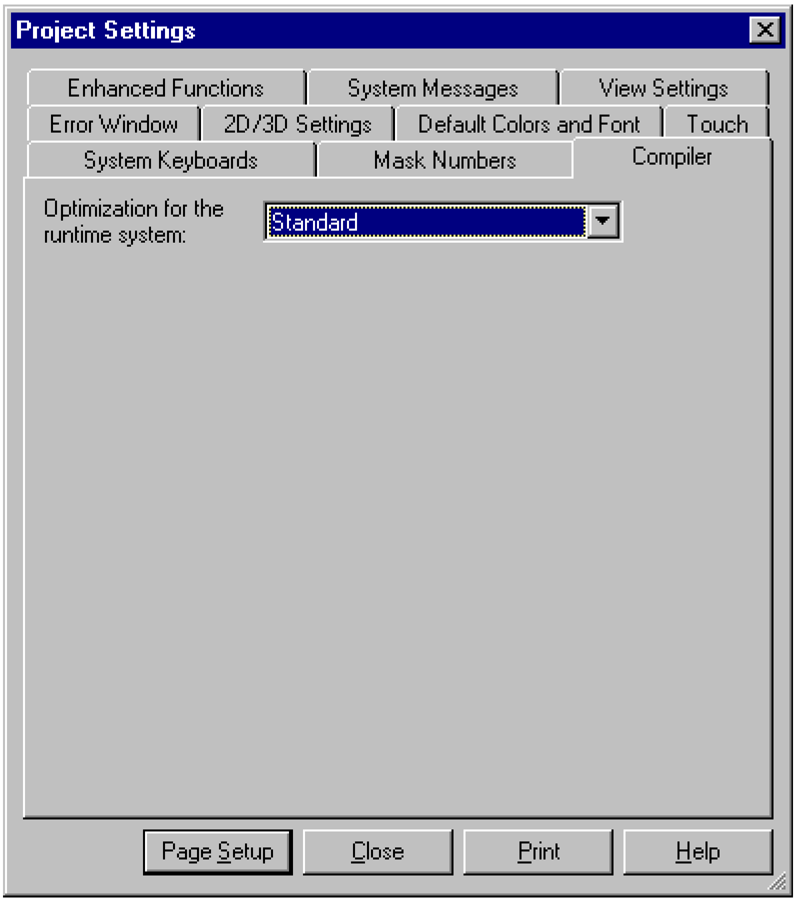
Mask Number

Number of the mask selected from the list above this field.

Modify

Press this button to modify the number of the actual selected mask. This button is getting enabled, if the mask number was changed.

6.5.8 Compiler



Optimization for the runtime system: Standard

Optimization of the runtime system:

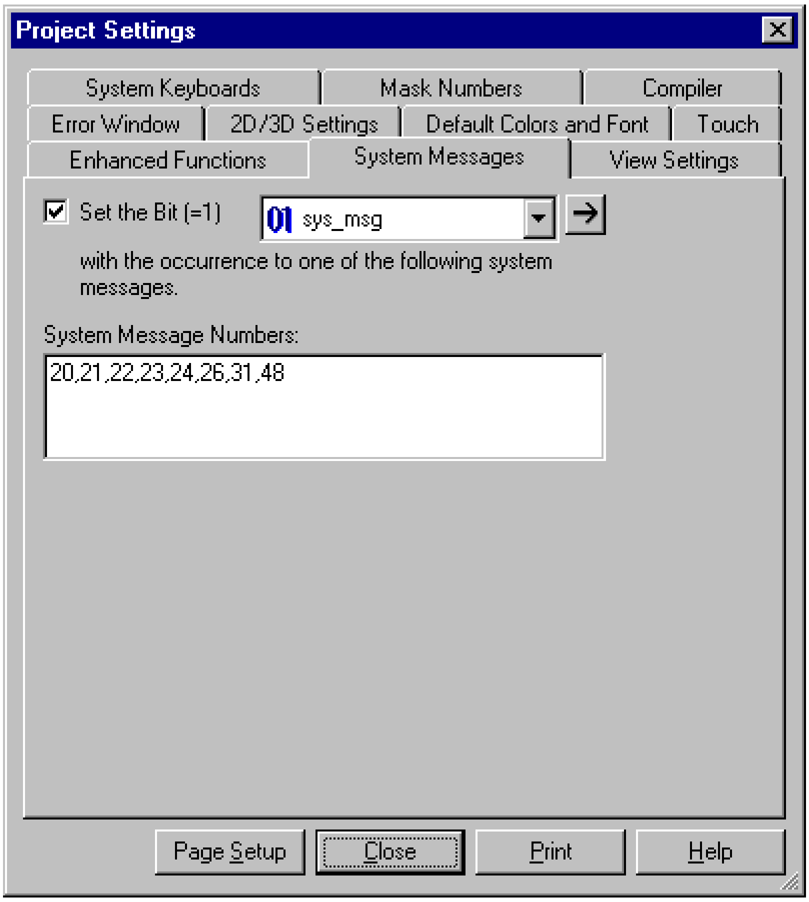
The following optimization options are available in the compiler:

Minimize Size: Compared to the '**Maximize Speed**' setting the bitmaps for which the Keep Size option has not been selected are displayed partly slower.

Standard: The bitmap display is optimized. All large bitmaps which are maximized or minimized on the unit (Keep Size option not selected) are saved by the compiler in the modified size. This considerably increases the display speed of the bitmaps.

Maximize Speed: The bitmap display is optimized. All bitmaps which are maximized or minimized on the unit (Keep Size option not selected) are saved by the compiler in the modified size. This considerable increases the recording speed of the bitmaps.

6.5.9 System Messages



☑ Set the Bit (=1) 01 sys_msg

with the occurrence to one of the following system messages.

System Message Numbers:

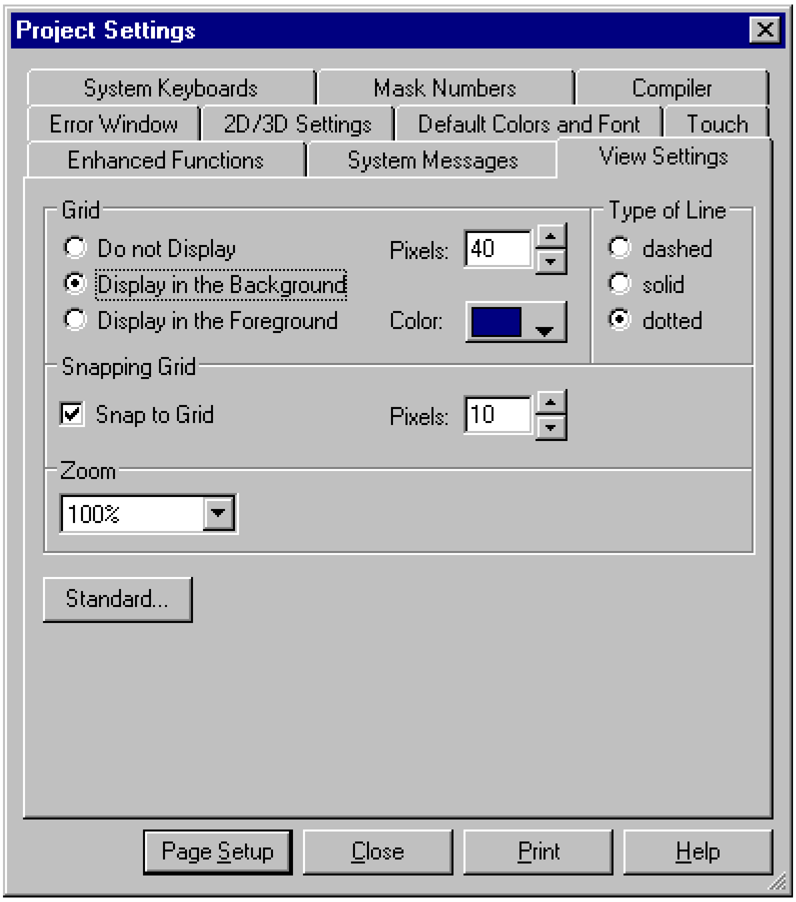
20,21,22,23,24,26,31,48

If this option is active, the selected bit tag is set to 1 with the occurrence of the indicated system messages (see listbox: **System Message Numbers**). If the tag is already set to 1 with the occurrence of a system message, the tag is not changed. Only bit tags with the direction Write are available. The listbox **System Message Numbers** contains only numbers and the comma character. A more detailed description of the system messages is given in chapter "System Messages" of GRS.HLP.

Note:
Resetting the bit tag to 0 must be designated in the project, since the system never resets the tag to 0.

See also Definition of Tags

6.5.10 View Settings



Grid

○ Do not Display

● Display in the Background

○ Display in the Foreground

Pixels: 40

Color: ■

Type of Line

○ dashed

○ solid

● dotted

Snapping Grid

☑ Snap to Grid

Pixels: 10

Zoom

100%

Grid

For the display of the raster the three options are available "**do not Display**", "**Display in the Background**" and "**Display in the Foreground**". The spaces between the grid is defined by the number of View Settings.

See also Toolbar "Draw"

Pixels

When selecting the grid option "**Display in the Background**" or "**Display in the Foreground**", use this field to define the space of the grid in the number of pixels per space.

Color

Color defined for the grid (also known as display grid)

Type of Line

The display grid can be shown as a solid, dashed or dotted line.

Snap to Grid

If this option is selected, only the positions on the grid can be used within the mask. This applies to operations when drawing, moving, enlarging or reducing new objects. The "**Pixels (Snapping-Grid)**" field is used to set the distance between the snap grids according to number of pixels.

Pixels (Snapping-Grid)

If the "**Snap to Grid**" option has been selected, use this field to set the required grid spacing in pixels.

Zoom

The mask view can be enlarged or reduced as required. This can also be done via the Toolbar "Draw".

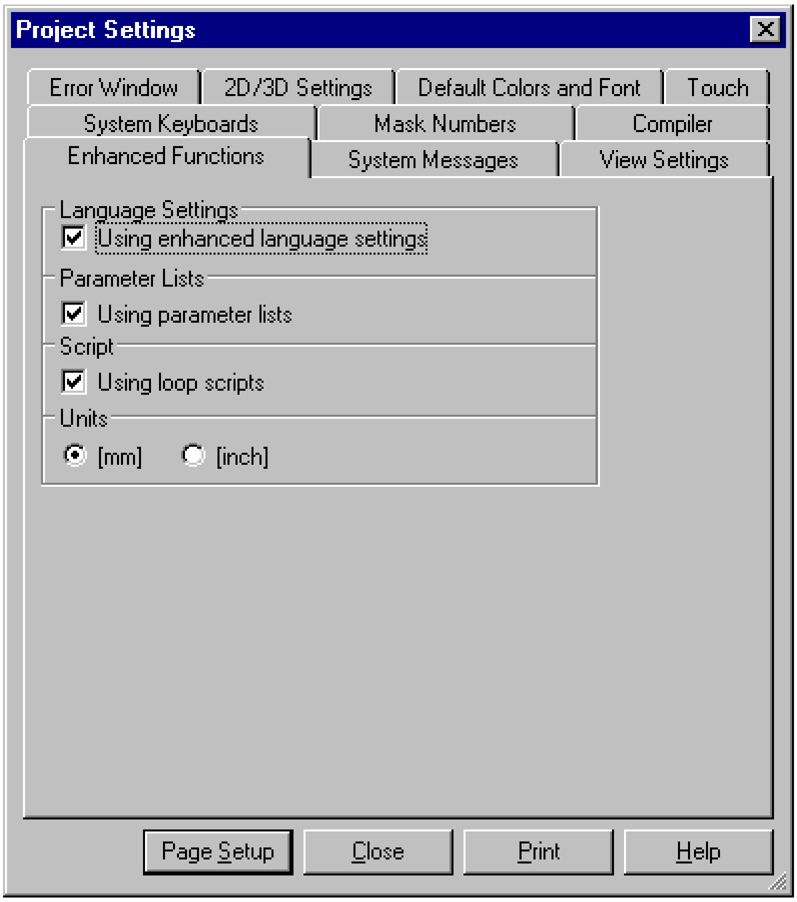
Note:
Enlarging or reducing the view may cause distortions.

Standard...

Resets the values to the default values.

6.5.11 Enhanced Functions

Enhanced Functions



Language Settings
☑ Using enhanced language settings

Parameter Lists
☑ Using parameter lists

Script
☑ Using loop scripts

Units
● [mm] ○ [inch]

Language settings

Select this option to enable the use of non-Roman character sets such as Cyrillic and Greek.

See also Languages, Define Text

Using Parameter List

If this option is used, the Parameter List objects and the 'Parameter List' dialog are available for setting tags for the parameter list.

Using Loop Scripts

If this option is selected, the Loop Scripts is available in the project overview.

Units

Defines which unit is to be used as the default unit. The units are used for: Margin at Printer, Mask Settings

6.6 Languages

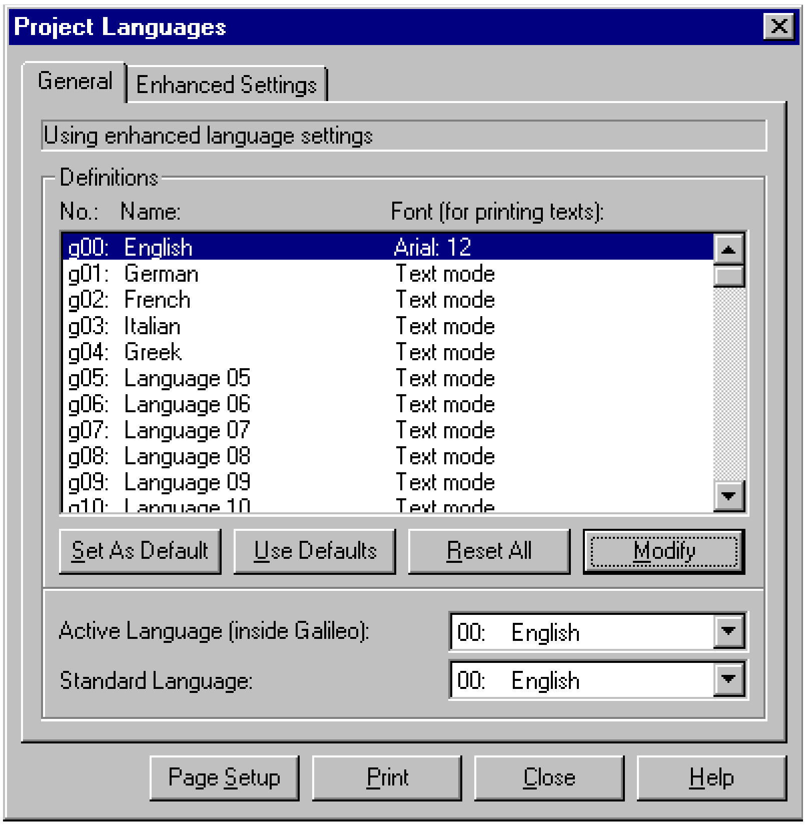
6.6.1 Languages

Galileo supports up to 100 different project languages. A new language can be selected using the Change to language 00..99 special function. The creation and editing of the various language texts is carried out using the GWS Galileo Workshop program.

Language selection can be automatically set for a particular user or user level. A detailed description of this is given in chapter Language Selection.

6.6.2 General

General



Using enhanced language settings

No.:	Name:	Font (for printing texts):
g00:	English	Arial: 12
g01:	German	Text mode
g02:	French	Text mode
g03:	Italian	Text mode
g04:	Greek	Text mode
g05:	Language 05	Text mode
g06:	Language 06	Text mode
g07:	Language 07	Text mode
g08:	Language 08	Text mode
g09:	Language 09	Text mode
g10:	Language 10	Text mode

Active Language (inside Galileo): 00: English

Standard Language: 00: English

This dialog box is used for entering the exact names of the languages to be configured. The standard designation "Language xx" (xx = 0..99) is used. These texts can be replaced by the appropriate designation as required (e.g. "German", "English", ...).

It is also possible to define for each language whether the text printout should be made in Text mode or Graphic mode. Graphic mode allows the possibility of setting the font and font size.

The necessary settings can be made in the Modify dialog.

Note:
Use "Galileo Workshop GWS" to translate the texts of the project.

Using standard / enhanced language settings

Enhanced language settings allow the use of non-Roman characters such as Greek or Cyrillic. These are carried out in the Modify and Enhanced language settings dialogs.

The enhanced language settings are enabled in the Enhanced Functions dialog.

Set as Default

Clicking this button stores the current designations in a file. If these designations are also required in another project, clicking the Use Default button will load the saved designations.

Use Default

Clicking this button loads and displays the designations that were saved with the Set as Default button.

Reset All

Clicking this button resets the language designations to the standard designations ("Language xx" with xx = 0..99). This function also sets the error printout for all languages to Text mode.

See also Modify

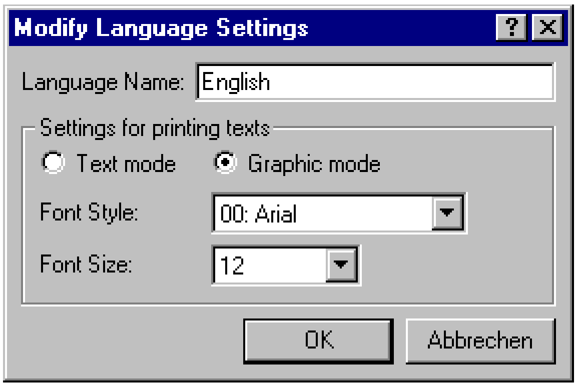
Active Language (inside Galileo)

If a project already consists of several languages, this list box can be used to select the language for the current project.

Standard Language

If a Project already consists of several languages, the Standard Language can be used to select in which language the device will start after a project update or change. If the option "Automatic Language Change" is selected, this standard language will be selected with a "User Logout.

Modify



Modify Language Settings

Language Name: English

Settings for printing texts

○ Text mode ● Graphic mode

Font Style: 00: Arial

Font Size: 12

The following settings can be modified for each language.

Language name

This language name is only used by Galileo internally and is not used by the Touch Panel units themselves.

See also Status bar, **Galileo Workshop GWS**

Settings for printing texts

Text mode: Printout in the standard font of the printer in use.

Advantage: Considerably faster printout than in Graphic mode.

Disadvantage: Non-Roman characters sets (e.g. Cyrillic) only supported by special printers.

Graphic mode: Printout possible with the font and font size selected.

Advantage: Use of non-Roman character sets supported. Error printout possible with the font and font size required.

Disadvantage: The printout is considerably slower than in Text mode.

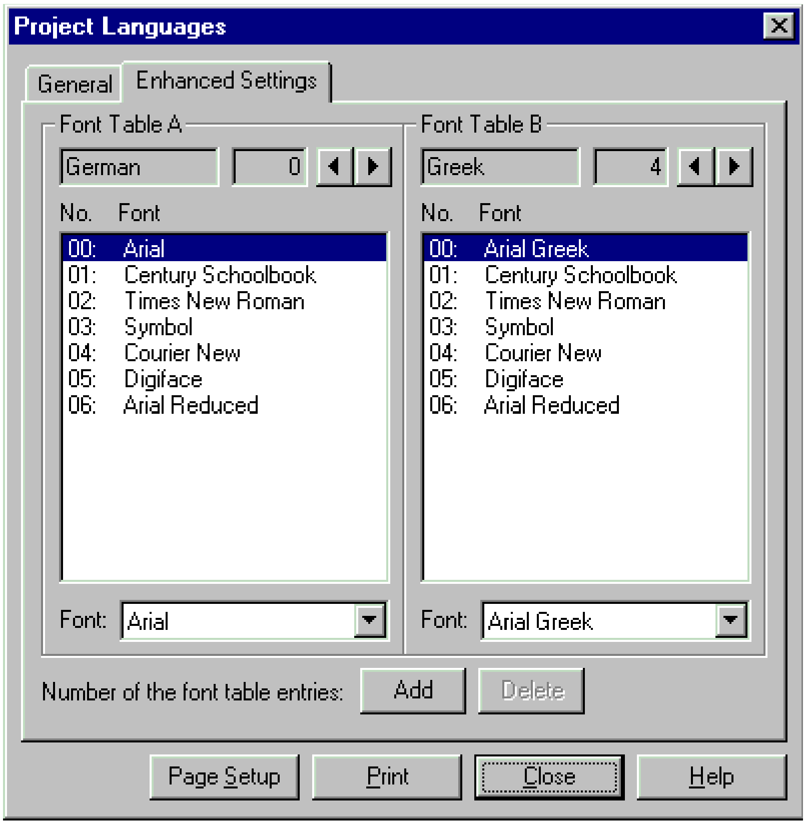
See also Error Window, Print Online All, Print Online Errors, Print History

6.6.3 Enhanced language settings

Enhanced language settings

This dialog is only active if enhanced language settings are used.

See also Enhanced Functions



Font Table A: German 0

No.	Font
00:	Arial
01:	Century Schoolbook
02:	Times New Roman
03:	Symbol
04:	Courier New
05:	Digiface
06:	Arial Reduced

Font: Arial

Font Table B: Greek 4

No.	Font
00:	Arial Greek
01:	Century Schoolbook
02:	Times New Roman
03:	Symbol
04:	Courier New
05:	Digiface
06:	Arial Reduced

Font: Arial Greek

Number of the font table entries:

How the language settings are modified is described below. When a language is changed, all texts of the language concerned and its font table are loaded.

Example:

If the language 0 (German) is changed to language 4 (Greek), as shown in the dialog above, all the texts shown in font 0 will be shown in the font 'Arial Greek'. This will allow the correct display of the Greek texts of language 4.

Note:
The following two points must be observed to ensure that texts requiring non-Roman character sets (e.g. Cyrillic, Greek) are correctly shown:

- The text must be assigned to the appropriate character set
- The selected font must also be suitable for the character set concerned

See also Define Text

Font Table A / B

The font settings of two languages can be displayed and edited at the same time. The currently displayed language is indicated in the Display field. The language required is selected using the Buttons ◀▶.

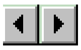
Display

German 0

This field shows the name and number of the language selected.

See also Buttons, Table of the fonts of the selected language, Languages, Modify

Buttons



◀▶

Use these buttons to select a different language.

See also Table of the fonts of the selected language, Languages, Modify

Table of the fonts of the selected language

Tables A/B show the fonts of the languages selected via the Buttons.

The list contains all the fonts available in the font selection fields when the project was designed. The fonts in the list can be changed via the selection field by selecting the font to be changed in the list and then selecting the new font in the Font list box below.

The list can be increased or reduced using the Add and Delete buttons, as well as the Font list box. All languages contain the same number of fonts.

Font

This list box contains a list of all the fonts supported by Galileo. Use the Add button to add more fonts to the Table of the fonts of the selected language.

Add

This button adds the font previously selected in the Font list box to the end of the Table of the fonts of the selected language.

Adding a font will extend the font list of all languages with the font of the left-hand Font list box.

See also Font, Delete, Table of the fonts of the selected language

Delete

This button deletes the last font from the list of all fonts of the selected language. The button is only active if the last font in the font list of the selected language has been selected.

See also Font, Add, Table of the fonts of the selected language

6.7 Password Settings

6.7.1 Password Settings

This dialog is used for all user password and user level settings.

User and access rights can be defined for each project according to the requirements at hand.

Up to 200 user levels can be defined, with each level and corresponding name assigned to a bit in the PLC. Activating a particular user level causes all the relevant bits from this level up to level 199 to be set.

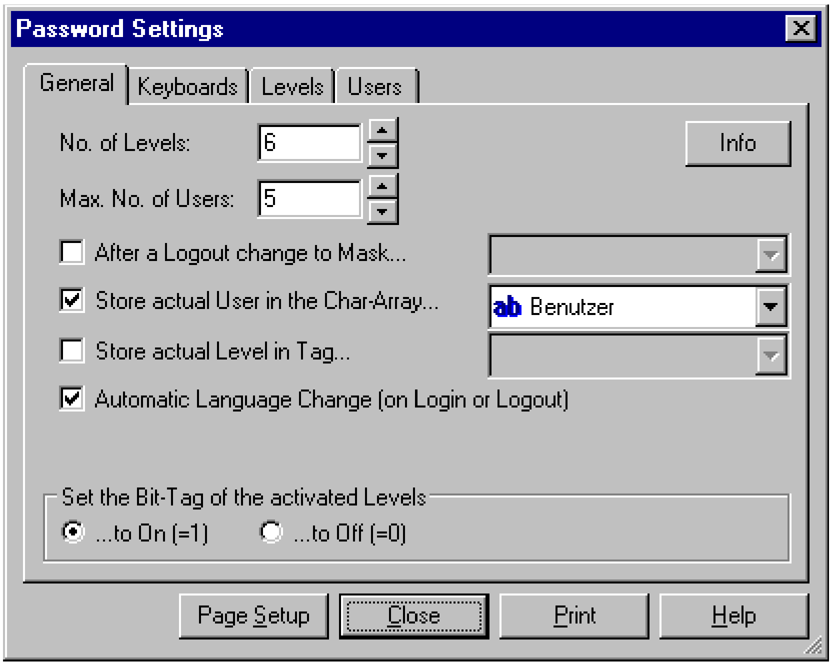
Up to 500 users with a separate password can be defined within each project. Each user is assigned a particular level. A user assigned level 0 has access to all levels. A user assigned level 20 has access to all levels from 20 to 199.

Use "**Print**" to print out a table showing all the relevant settings.

See also Password Functions

6.7.2 General

General



No. of Levels: 6

Max. No. of Users: 5

□ After a Logout change to Mask...

☑ Store actual User in the Char-Array... ab Benutzer

□ Store actual Level in Tag...

☑ Automatic Language Change (on Login or Logout)

Set the Bit-Tag of the activated Levels

● ...to On (=1) ○ ...to Off (=0)

No. of Levels

This field defines the number of user levels. The maximum number of user levels is 200.

Max. No. of Users

This field defines the maximum number of users. The memory is reserved for the set number of users irrespective of how many users have already been actually defined. New users can be defined or deleted on the Users tab in the same way as on the MMI.

The Max. No. of Users is 500.

After a Logout change to Mask...

With this option active the Touch Panel will switch automatically to the specified mask after a Logout.

See also Use automatic Logout, Levels and User Logout

Store actual User in Char-Array

The current user name can be saved in a PLC Text object and then transferred to the PLC.

Store actual Level in Tag

The current user level can be stored in a tag and then transferred to the PLC. For instance the tag has the value 3 for the activated level 3. After a logout the value of the tag is set to No. of Levels.

See also Definition of Tags

Automatic Language Change

If this option is selected, the functions "User Login", "Login at Level x" and "User Logout" will carry out a language change. "User Login" and "Login at Level x" enable the languages to be selected that were last used by these users. "User Logout" causes the "Standard Language" to be loaded.

If this option is not selected, no automatic language change is carried out.

See also Language Selection

Set the Bit-Tag of the activated Levels...

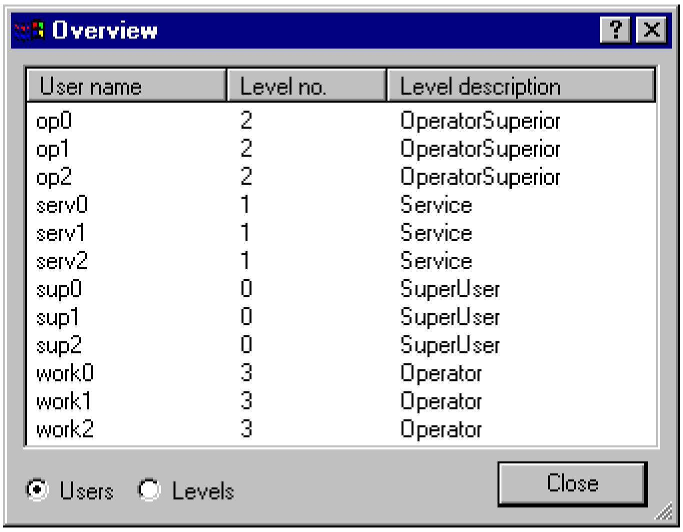
...to On (=1)

Sets all access bit tags of the activated user level to 1. All bits of non-activated user levels are 0.

...to Off (=0)

Sets all access bits tags of the activated user level to 0. All bits of non-activated user levels are 1.

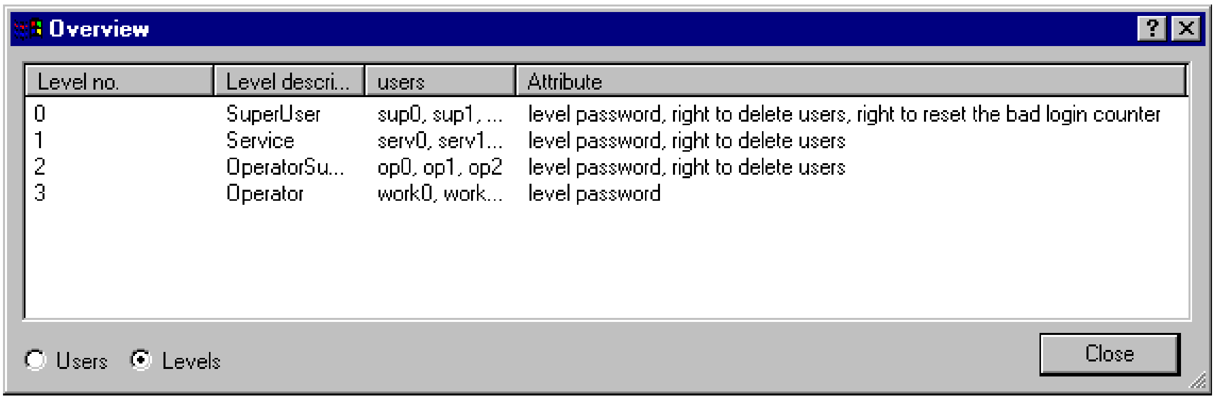
Info



User name	Level no.	Level description
op0	2	OperatorSuperior
op1	2	OperatorSuperior
op2	2	OperatorSuperior
serv0	1	Service
serv1	1	Service
serv2	1	Service
sup0	0	SuperUser
sup1	0	SuperUser
sup2	0	SuperUser
work0	3	Operator
work1	3	Operator
work2	3	Operator

● Users ○ Levels

Shows a list of the defined users.



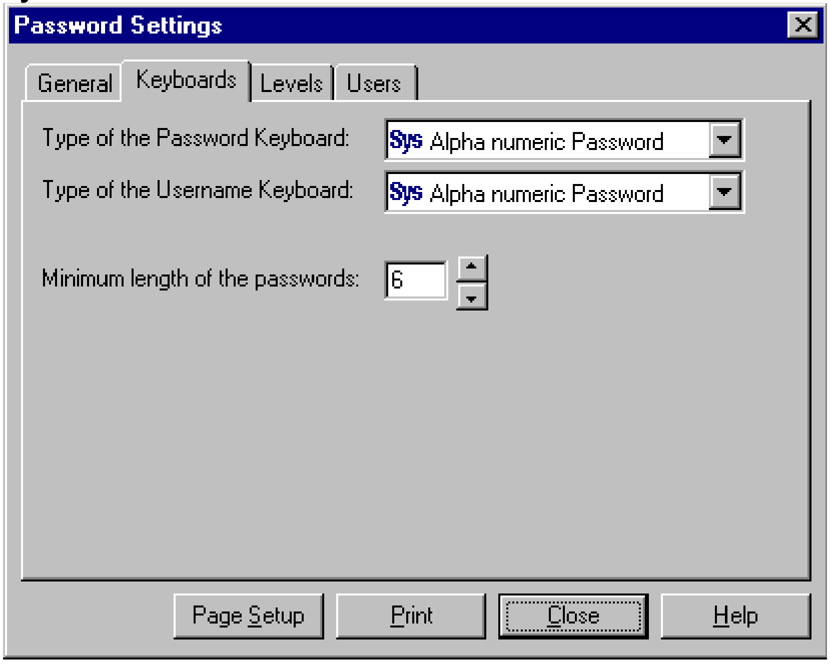
Level no.	Level descri...	users	Attribute
0	SuperUser	sup0, sup1, ...	level password, right to delete users, right to reset the bad login counter
1	Service	serv0, serv1...	level password, right to delete users
2	OperatorSu...	op0, op1, op2	level password, right to delete users
3	Operator	work0, work...	level password

○ Users ● Levels

Shows a list of the defined levels.

6.7.3 Keyboards

Keyboards



Type of the Password Keyboard: Sys Alpha numeric Password

Type of the Username Keyboard: Sys Alpha numeric Password

Minimum length of the passwords: 6

Type of the Password Keyboard

An alphanumeric or numeric keyboard can be used for entering the password.

See also Keyboards

Type of the Username Keyboard

An alphanumeric or numeric keyboard can be used for entering the user name.

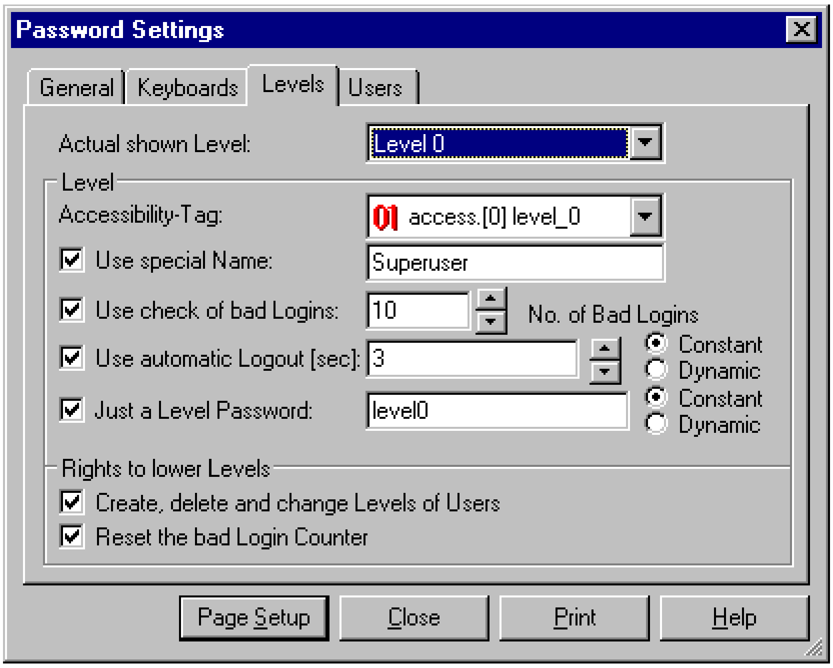
See also Keyboards

Minimum length of the passwords

Minimum length of the password that must be entered when changing a password or when creating a new user.

6.7.4 Levels

Levels



Password Settings

General | Keyboards | Levels | Users

Actual shown Level: Level 0

Level

Accessibility-Tag: 01 access.[0] level_0

☑ Use special Name: Superuser

☑ Use check of bad Logins: 10 No. of Bad Logins

☑ Use automatic Logout [sec]: 3 ● Constant ○ Dynamic

☑ Just a Level Password: level0 ● Constant ○ Dynamic

Rights to lower Levels

☑ Create, delete and change Levels of Users

☑ Reset the bad Login Counter

Actual shown Level

The dialog contains the settings of the currently selected level. The drop-down list box contains the number of levels defined under No. of Levels.

Accessibility-Tag

The current user level is assigned to this bit tag. After the special functions Login at Level x or User Login have been called, the bit tag is set according to the Set the Bit-Tag of the activated Levels... setting. The tag is reset after the user logs out. See also Accessibility

Use special name

For greater clarity, a name can be assigned to each user level.

This name is just for internal use of Galileo and is not used by runtime system GRS.

Use check of bad logins

If this option is active, the number of times that the special functions Login at Level x or User Login have been called with invalid password entry will be monitored. If the set number of bad logins is exceeded, a login with this user name is no longer possible.

This counter is reset when a valid login has been entered by the user or by calling the special Reset Bad Login (Level x) or Reset Bad Login (User).

See also Reset the bad Login Counter

Use automatic logout after x seconds

Selecting this option automatically deactivates this user level if no operations are made within x seconds, i.e. the Accessibility is reset according to the settings of Set the Bit-Tag of the activated Levels... .

A constant string or a tag can be defined for a time.

Just a level password

If this option is active the user level is assigned the specified password. This user level can then be activated with the special function Login at Level x, x being the number of the level concerned.

A constant string or a tag can be defined as password. If a tag is defined, the content of the tag is compared with the entry of the user.

No letters can be entered if the Type of the Password Keyboard was set to Numeric.

If this option is not used, this user level can only be activated via the special function User Login.

Create, delete and change levels of users

If this option is selected, the users for this level are assigned the following rights:

- To define new users (special function New User)
- To delete users (special function Delete User)
- Modification of user passwords of others users (special functions Change PW (other User) or Change PW (Level x)
- Setting users to a different user level (special function Change Level)

These rights also apply if this user level is activated via the special function Login at Level x.

The rights mentioned above apply to all subsequent levels (levels with higher numbers). In the case of user level 0, these rights also apply to this level.

Reset the bad login counter

If this option is active, the users of this level have the following rights:

- Reset the counter of a user (special function Reset Bad Login (User))
- Reset the counter of a user level (special function Reset Bad Login (Level x))

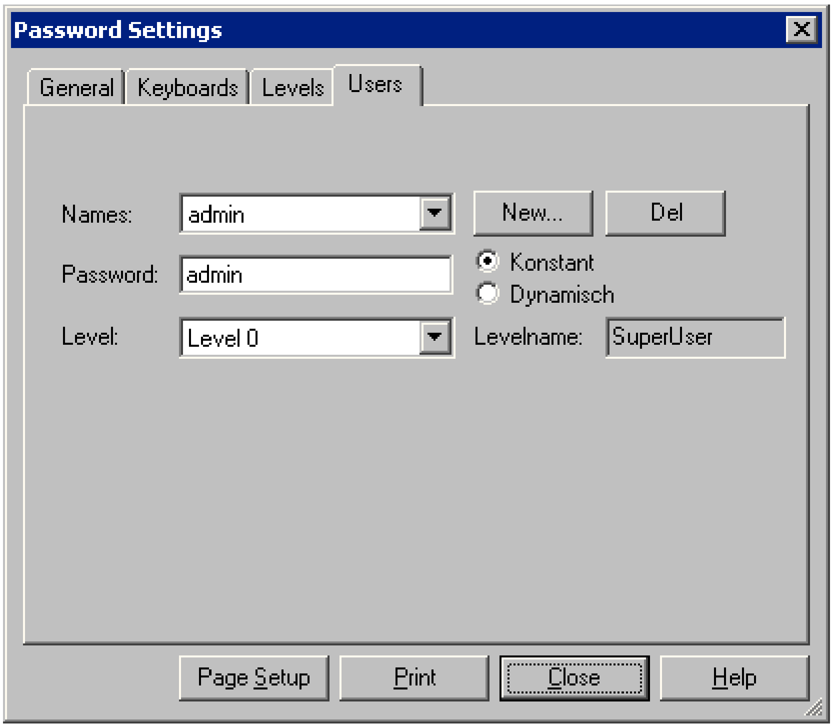
These rights also apply if this user level was activated via special function Login at Level x.

The rights mentioned above apply to all lower levels (levels with higher numbers). In the case of user level 0, these rights also apply to this level.

See also Use check of bad Logins

6.7.5 Users

Users



Names: admin

Password: admin

● Konstant

○ Dynamisch

Level: Level 0

Levelname: SuperUser

The passwords and user names are case sensitive.

Names

Selects all defined users names

New...

Add new user

A new users can be also be added directly on the MMI. No letters can be entered if the Type of the Username Keyboard was set to Numeric.

Delete

Delete currently selected user.

A user can also be deleted directly on the MMI.

Password

Password of the selected user.

A constant string or a tag can be defined as password. If a tag is defined, the content of the tag is compared with the entry of the user.

This password can also be changed directly on the MMI. No letters can be entered if the Type of the Password Keyboard was set to Numeric.

Level

Assign the user to the required user level.

The level to which the user is to be assigned can also be changed directly on the MMI.

Levelname

This field displays the special name assigned to the level.

See also Use special Name

6.8 Selecting the PLC

6.8.1 Selecting the PLC

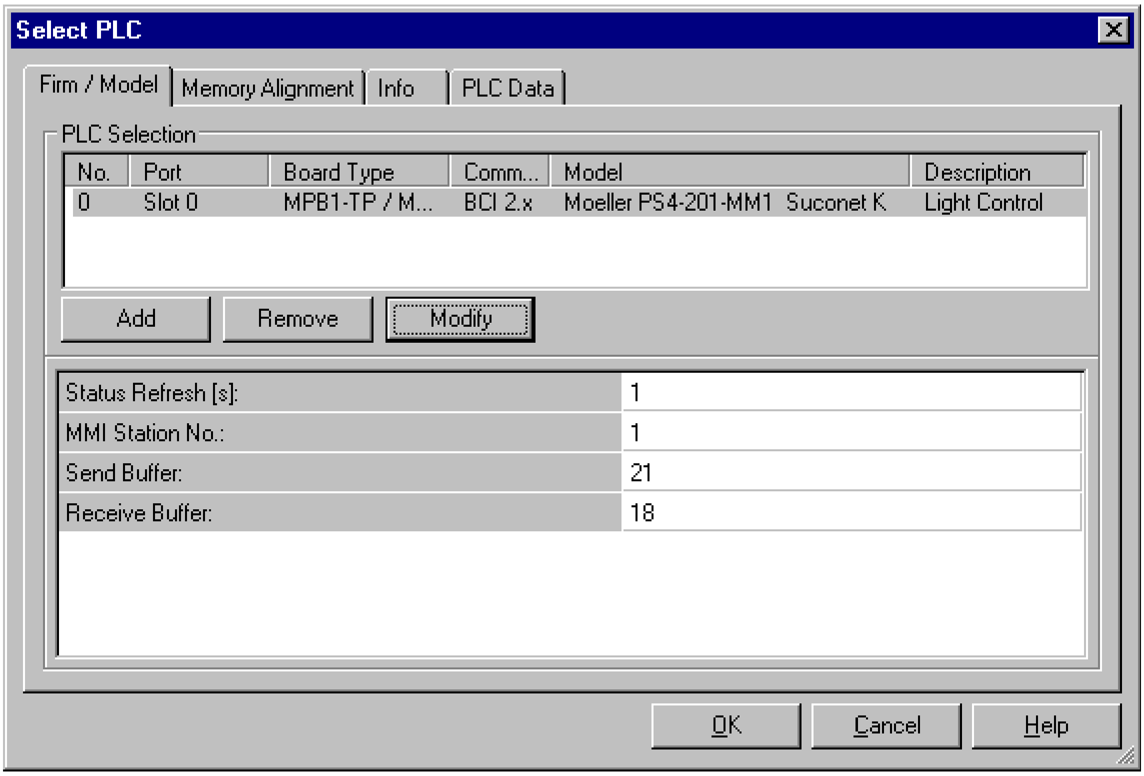
The same project can be configured for a wide range of different PLCs.

The PLC should be selected at least before the data blocks are addressed since the address syntax required depends on the PLC used.

An existing project can therefore be re-configured for a different PLC by selecting the new PLC in the Select PLC dialog box. Only PLCs can be selected that have the same data block size (data blocks). Each data block (not each tag) must then be re-addressed unless a different syntax is required (e.g. MOELLER PS4-141-MM1 and MOELLER PS4-341-MM1 have the same syntax).

6.8.2 Select PLC

Select PLC



No.	Port	Board Type	Comm...	Model	Description
0	Slot 0	MPB1-TP / M...	BCI 2.x	Moeller PS4-201-MM1 Suconet K	Light Control

Status Refresh [s]:	1
MMI Station No.:	1
Send Buffer:	21
Receive Buffer:	18

These fields are used to select the required PLC protocol of the currently available interface(s). The number of interfaces available depends on the device types selected (see also Selecting the MMI type).

Link

This column shows the selected communications interface.

Add

Add new PLC-Protocol

Delete

Delete selected PLC protocol.

Modify

Modify selected PLC protocol.

Port

This column shows the selected interface.
Either serial interfaces (system port x) or communication cards (slot x) are available.

Board Type

The selected type (PLC/protocol) determines which board/card type is required for it.

Communication

This column shows the selected interface. Either serial interfaces (System Port x) or communication cards (Slot x) are available.

Type

Select the PLC to be connected and the relevant protocols.

Description

Freely definable description text for this PLC.

Options

The Options section of the dialog is used for making any settings required for the PLC protocol used.

The number of fields accessible in this section more or less depend on the number of parameters for the PLC protocol concerned. Refer to the communications card documentation for a description of the parameters concerned.

See also Brief information

Baud Rate

This field is only active if the selected protocol requires a setting here.

Select the permissible transmission rates between MMI and PLC.

MMI Station No.

This field is only active if the selected protocol requires a setting here.

This field is used to specify the station number of the MMI in a network.

Status Refresh [s]

Defines the maximum refresh time of the status block in seconds. If no MMI status change occurs within the specified refresh time , the status structure is sent to the PLC anyway.

Note:
The smaller the refresh time, the greater the communication activity between the panel and the PLC. This may cause only the Status structure to be transferred.
Rule:
As only one data block is normally transferred per PLC cycle, the selected **refresh time should be at least 5 times greater than the cycle time of the PLC**.

Send Buffer

This field is only active if the selected protocol requires a setting here.

This field defines the size of the send data block (MMI → PLC) including the header in number of bytes. This setting is only required for Moeller PLCs.

Receive Buffer

This field is only active if the selected protocol requires a setting here.

This field defines the size of the receive data block (PLC → MMI) including the header in number of bytes. This setting is only required for Moeller PLCs.

Startup Delay

Defines the delay between the start of the runtime and the start of communication with this PLC.

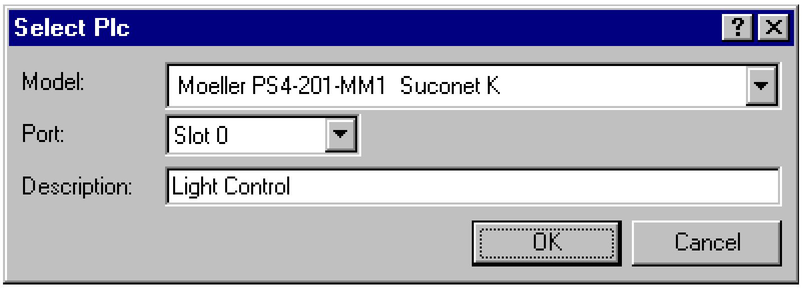
Remaining Parameters

The "not used" boxes shown in the above dialog are not set by the protocol selected. These fields are active and designated according to the protocol selected.

The remaining parameters depend on the PLC protocol selected. Refer to the documentation of the protocol concerned or communications card used for a description of the entries required.

Specific information on the entries required is also available under Brief information.

Add / Edit PLC-Protocol



Model: Moeller PS4-201-MM1 Suconet K

Port: Slot 0

Description: Light Control

Port

Shows the selected interface. Either serial interfaces (System Port x) or communication cards (Slot x) are available.

Model

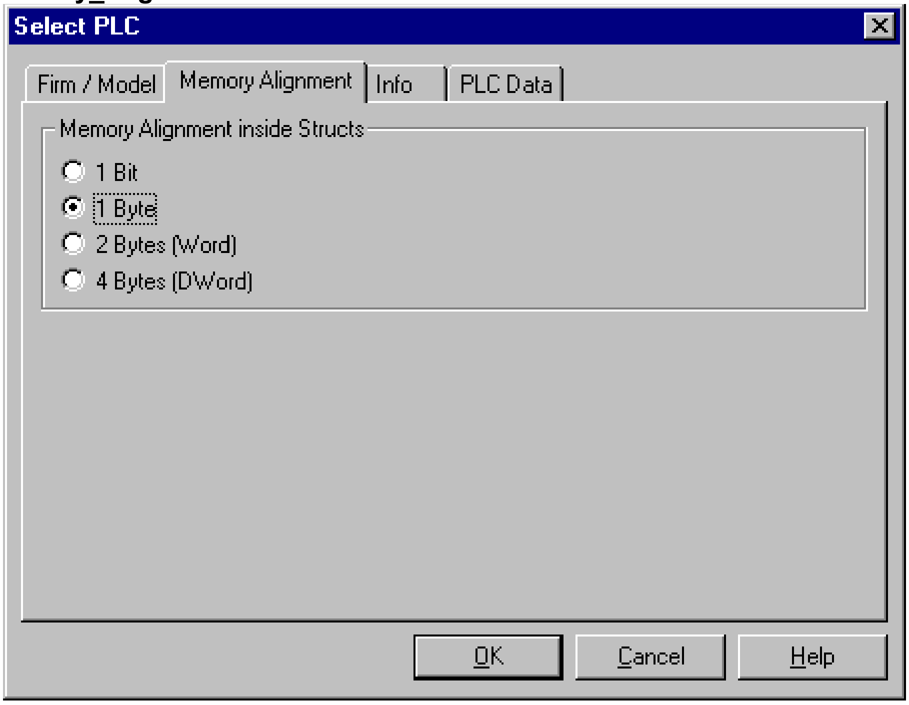
Selection of the PLC to be connected and the associated protocols.

Description

Freely definable description text for this PLC.

6.8.3 Memory Alignment

Memory_Alignment

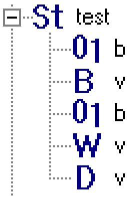


Memory Alignment inside Structs

○ 1 Bit
● 1 Byte
○ 2 Bytes (Word)
○ 4 Bytes (DWord)

The memory alignment defines how the individual tags of the structure are located in the PLC memory. This is carried out in order to achieve optimum flexibility with regard to the different PLC types.

The memory alignment is illustrated using the following example of a Moeller PLC and two Siemens PLCs. A structure with the following elements was made for the example:



Structure:	Data types:
St test	
01 button1	Bit
B value1	BYTE
01 button2	Bit
W value2	Word
D value3	DWord

The start addresses of the structure were set at %M0.0.0.0.0 on the Moeller PLC, ST2:MB0.0 on the Siemens S7 and DB10:D0.0 on the Siemens AS511. The individual structure elements then have the following PLC addresses on the basis of the different memory alignments (see also Example: Memory Alignment listed below:

PLC:	Elements:	Memory alignment:			
		1 Bit	**1 Byte**	**2 Bytes**	**4 Bytes**
Moeller PS 4-x-MMI	button1	%M0.0.0.0.0	%M0.0.0.0.0	%M0.0.0.0.0	%M0.0.0.0.0
	value1	%M0.0.0.0.1	%M0.0.0.1.0	%M0.0.0.1.0	%M0.0.0.1.0
	button2	%M0.0.0.1.1	%M0.0.0.2.0	%M0.0.0.2.0	%M0.0.0.2.0
	value2	%M0.0.0.1.2	%M0.0.0.3.0	%M0.0.0.4.0	%M0.0.0.4.0

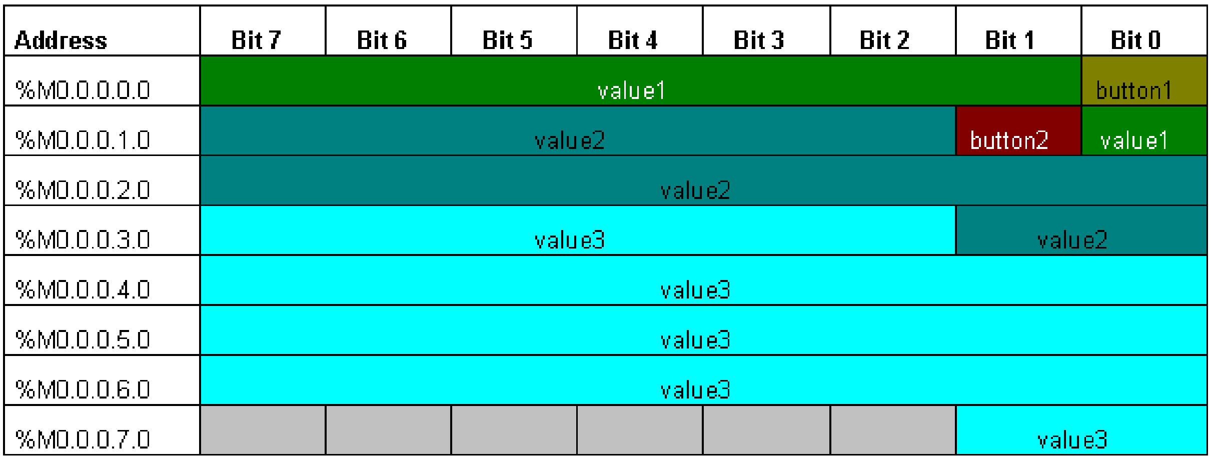
	value3	%M0.0.0.3.2	%M0.0.0.5.0	%M0.0.0.6.0	%M0.0.0.8.0
Siemens S7	button1	ST2:MB0.0	ST2:MB0.0	ST2:MB0.0	ST2:MB0.0
	value1	ST2:MB0.1	ST2:MB1.0	ST2:MB1.0	ST2:MB1.0
	button2	ST2:MB1.1	ST2:MB2.0	ST2:MB2.0	ST2:MB2.0
	value2	ST2:MB1.2	ST2:MB3.0	ST2:MB4.0	ST2:MB4.0
	value3	ST2:MB3.2	ST2:MB5.0	ST2:MB6.0	ST2:MB8.0
Siemens AS511	button1	DB10:D0.0	DB10:D0.0	DB10:D0.0	DB10:D0.0
	value1	DB10:D0.1	DB10:D0.8	DB10:D0.8	DB10:D0.8
	button2	DB10:D0.9	DB10:D1.0	DB10:D1.0	DB10:D1.0
	value2	DB10:D0.10	DB10:D1.8	DB10:D2.0	DB10:D2.0
	value3	DB10:D1.10	DB10:D2.8	DB10:D3.0	DB10:D4.0

Example: Memory Alignment

The following shows the memory layouts of the example listed above for Moeller PLCs for different alignments. Unused memory cells are shown as follows:

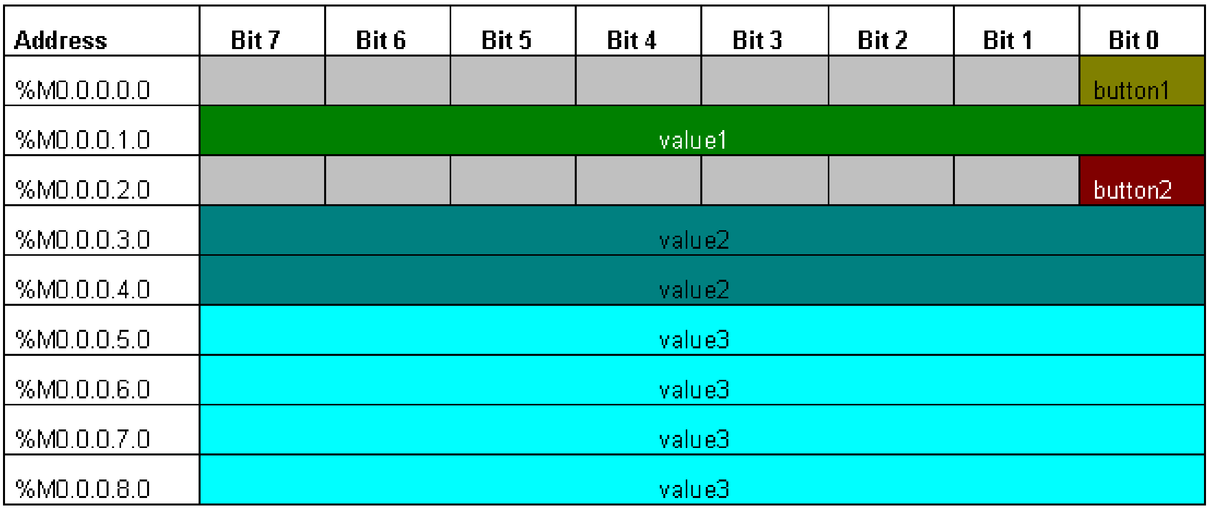
▨

Alignment: 1 Bit



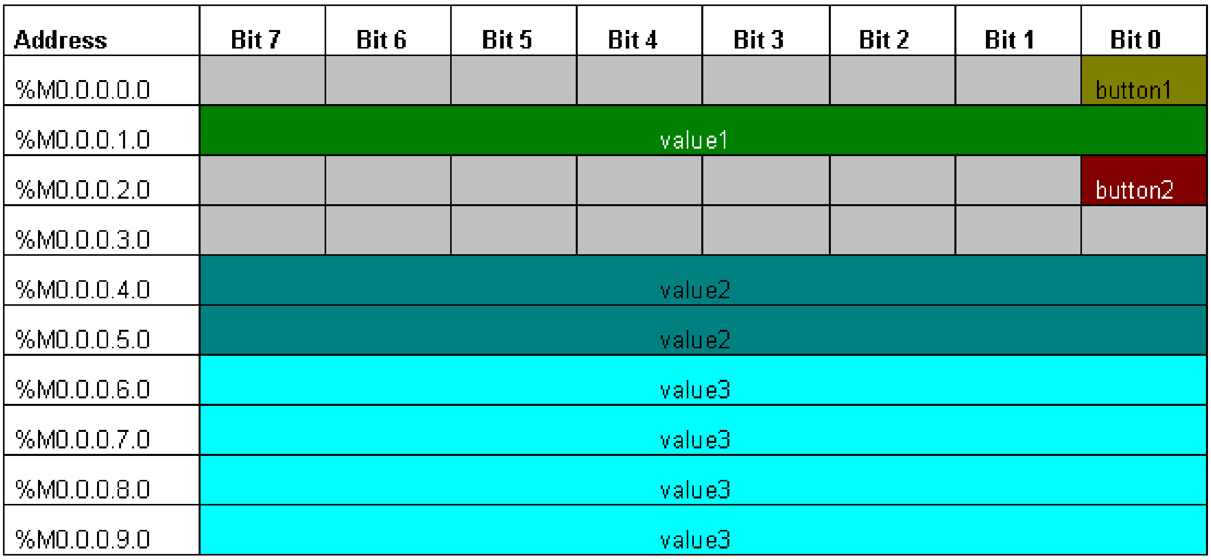
Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
%M0.0.0.0.0	value1							button1
%M0.0.0.1.0	value2						button2	value1
%M0.0.0.2.0	value2							
%M0.0.0.3.0	value3						value2	
%M0.0.0.4.0	value3							
%M0.0.0.5.0	value3							
%M0.0.0.6.0	value3							
%M0.0.0.7.0	▨	▨	▨	▨	▨	▨	value3	

Alignment: 1 Byte



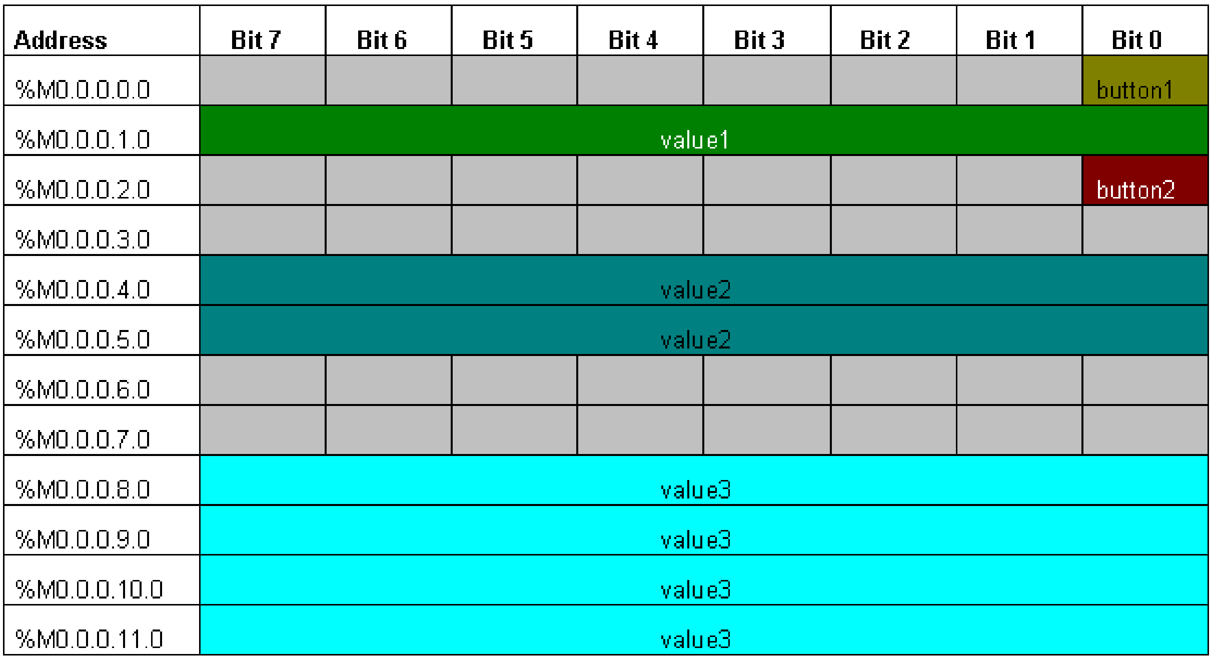
Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
%M0.0.0.0.0								button1
%M0.0.0.1.0	value1							
%M0.0.0.2.0								button2
%M0.0.0.3.0	value2							
%M0.0.0.4.0	value2							
%M0.0.0.5.0	value3							
%M0.0.0.6.0	value3							
%M0.0.0.7.0	value3							
%M0.0.0.8.0	value3							

Alignment: 2 Bytes



Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
%M0.0.0.0.0								button1
%M0.0.0.1.0	value1							
%M0.0.0.2.0								button2
%M0.0.0.3.0								
%M0.0.0.4.0	value2							
%M0.0.0.5.0	value2							
%M0.0.0.6.0	value3							
%M0.0.0.7.0	value3							
%M0.0.0.8.0	value3							
%M0.0.0.9.0	value3							

Alignment: 4 Bytes



Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
%M0.0.0.0.0								button1
%M0.0.0.1.0	value1							
%M0.0.0.2.0								button2
%M0.0.0.3.0								
%M0.0.0.4.0	value2							
%M0.0.0.5.0	value2							
%M0.0.0.6.0								
%M0.0.0.7.0								
%M0.0.0.8.0	value3							
%M0.0.0.9.0	value3							
%M0.0.0.10.0	value3							
%M0.0.0.11.0	value3							

If there are uncertainties regarding the memory alignment, the PLC addresses of the structure elements can be verified within the Address dialog.

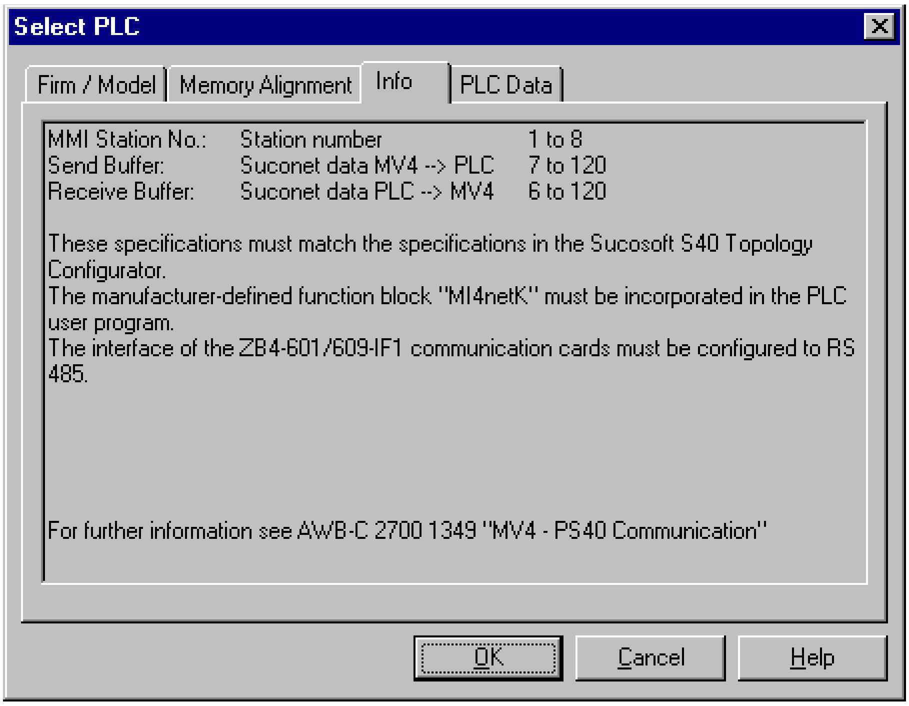
Note:
The unassigned memory cells between the individual structure elements must not be used by the PLC for other purposes. These are set to 0 when the structure is written from the MMI to the PLC.

6.8.4 Brief information

Brief information

This panel contains brief information on every selected PLC. Special features are also entered here.

The information is always written in English.



MMI Station No.:	Station number	1 to 8
Send Buffer:	Suconet data MV4 --> PLC	7 to 120
Receive Buffer:	Suconet data PLC --> MV4	6 to 120

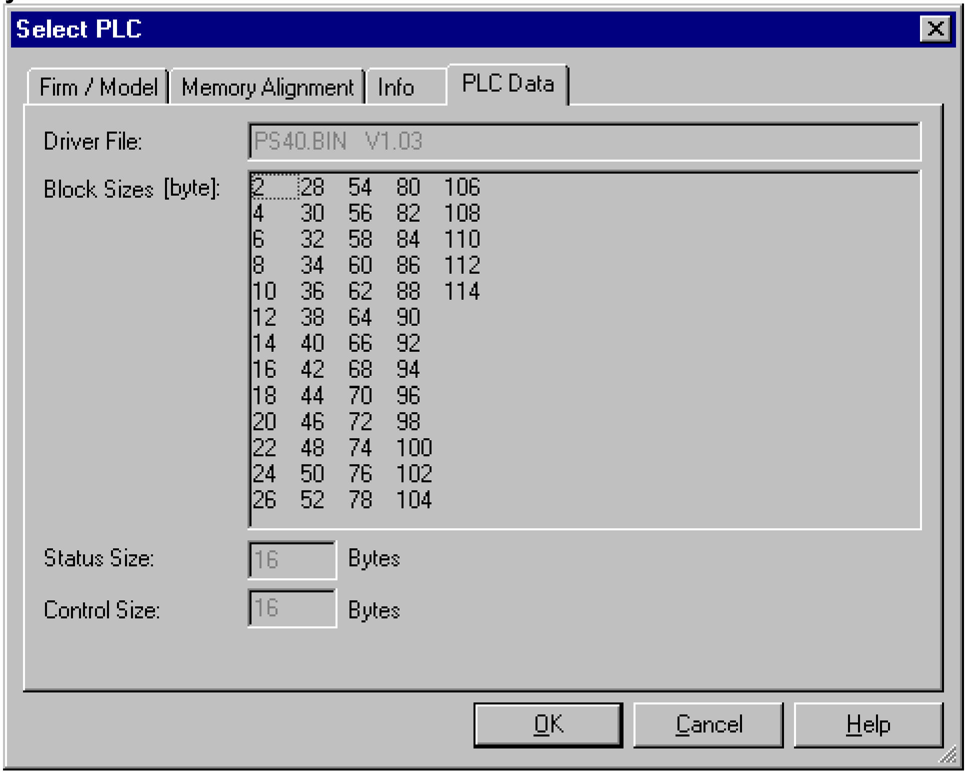
These specifications must match the specifications in the Sucosoft S40 Topology Configurator.
The manufacturer-defined function block "MI4netK" must be incorporated in the PLC user program.
The interface of the ZB4-601/609-IF1 communication cards must be configured to RS 485.

For further information see AWB-C 2700 1349 "MV4 - PS40 Communication"

Refer to the extensive device description of the relevant communications card (e.g. MPB).

6.8.5 Syntax information

Syntax information



Driver File: PS40.BIN V1.03

Block Sizes [byte]:

```
2    28   54   80   106
4    30   56   82   108
6    32   58   84   110
8    34   60   86   112
10   36   62   88   114
12   38   64   90
14   40   66   92
16   42   68   94
18   44   70   96
20   46   72   98
22   48   74   100
24   50   76   102
26   52   78   104
```

Status Size: 16 Bytes

Control Size: 16 Bytes

The Select PLC dialog is used for entering the permissible data block addresses.

Driver File

In conjunction with communications cards (e.g. MPB2), this file can be loaded into a flash memory, thus enabling the protocol to be updated simply. This file is not available for all protocols.

Block Sizes

All permissible data block sizes that can be defined for the selected PLC

Control Size

The size of the control data block. If several PLCs are connected to the MMI, they must all have the same size of control data block. (see also chapter "Status data block" in GRS.HLP)

Status Size

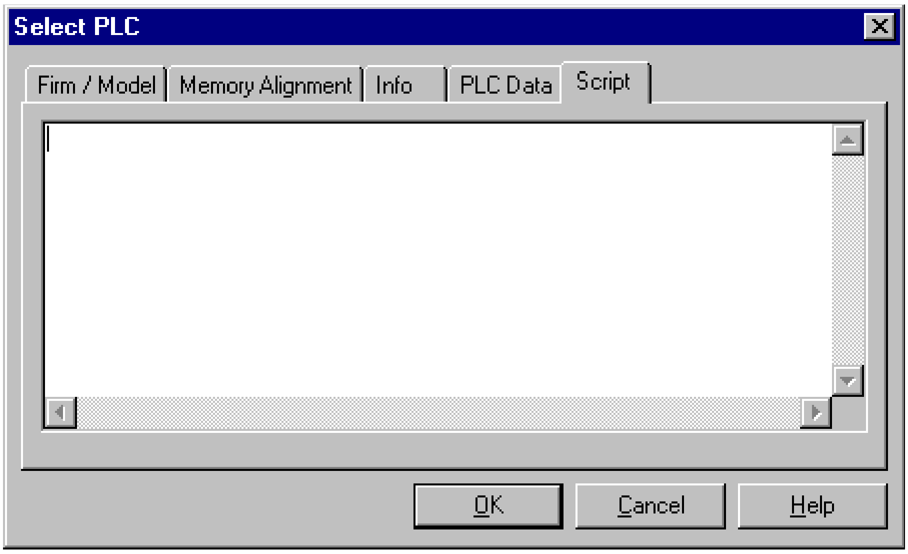
The size of the status data block. If several PLCs are connected to the MMI, all of them must have the same size of status data block. (see also chapter "Control data block" in GRS.HLP)

See also Panel Type, Definition of Tags and the chapter "PLC to PLC" data block in GRS.HLP

6.8.6 Script

PLC Script

Some PLC protocols require additional settings and information, such as for the "EIB installation bus". This panel is therefore only visible if the selected protocol requires additional settings. The Script panel is provided for these settings, although the entries required can also be made beforehand in a standard text editor. Tabs can be entered using the key combination CTRL+TAB.



Refer to the description of the PLC protocol required for more detailed information on the syntax of the settings required.

6.9 Define Text

6.9.1 Define Text

A project can contain three different types of texts.

- Standard text: Text for designations, buttons, fields, ...
- Error text: Text that appears in the Error Window
- Help text: Text that appears in the Help Window

All texts are language-dependent and can be translated using the GWS program (Galileo Workshop). Galileo also supports non-Roman character sets such as Greek, Cyrillic.

6.9.2 Index Number

Objects using texts only make note of the index number of the text concerned and not the text itself. Every text that is created is therefore assigned an index number which is assigned by GALILEO automatically and cannot be altered by hand. If a text is deleted, the text concerned is replaced by a blank text with the index number, which is not removed.

Index numbers in the various text types are independent of each other, i.e. the same index number can be used in any text type.

Recommendation:
In order to add new texts first of all use the blank texts (if present). This will ensure that unassigned memory is used. To assign new texts to blank texts click the Modify button instead of Add.

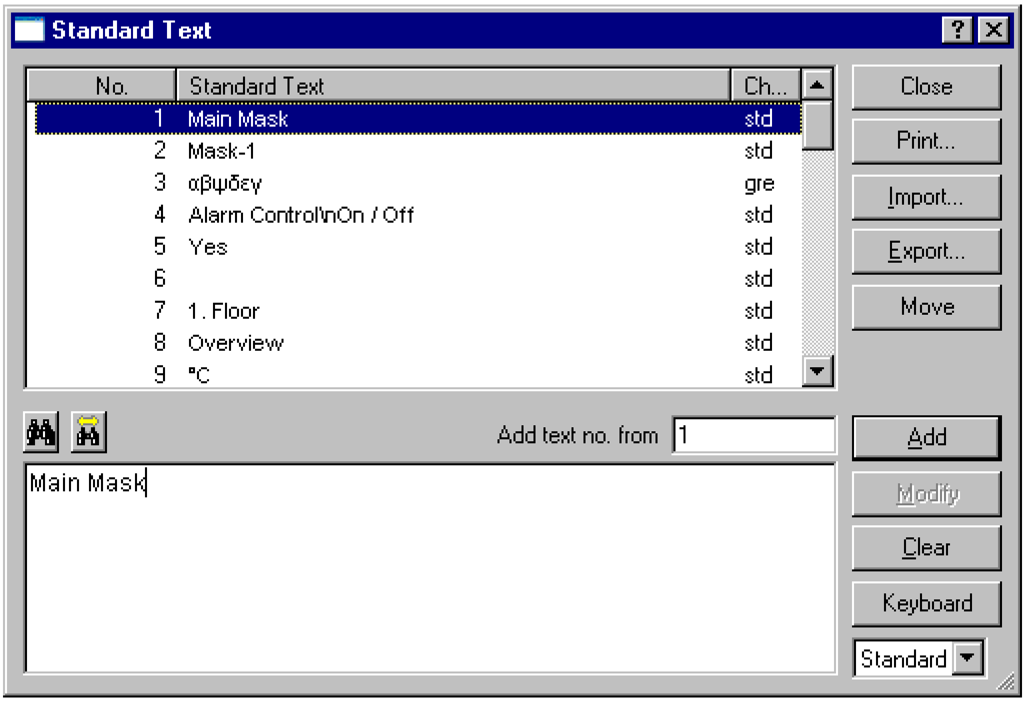
6.9.3 Charset (general)

The texts can be created with different character sets. The character set of the selected text can be defined in the selection field at the bottom right of the dialog.

Note:
Different character sets can only be used if the 'Enhanced Functions' option in the 'Enhanced Functions' dialog has been selected.

See also Languages, Program Galileo Workshop (GWS)

6.9.4 Standard Text



No.	Standard Text	Ch...
1	Main Mask	std
2	Mask-1	std
3	αβψδεγ	gre
4	Alarm Control\nOn / Off	std
5	Yes	std
6		std
7	1. Floor	std
8	Overview	std
9	°C	std

Add text no. from 1

Main Mask

Standard text is used for all static and dynamic objects (not help or error texts), such as inscriptions, titles, etc.

These texts can be any length and can consist of several lines.

The same text can be used several times. The font, font size and color are defined in the object that the text is used in.

Examples:

- Title
- Inscriptions
- Button designations (e.g. ON/OFF)
- Legends for "Graph" objects

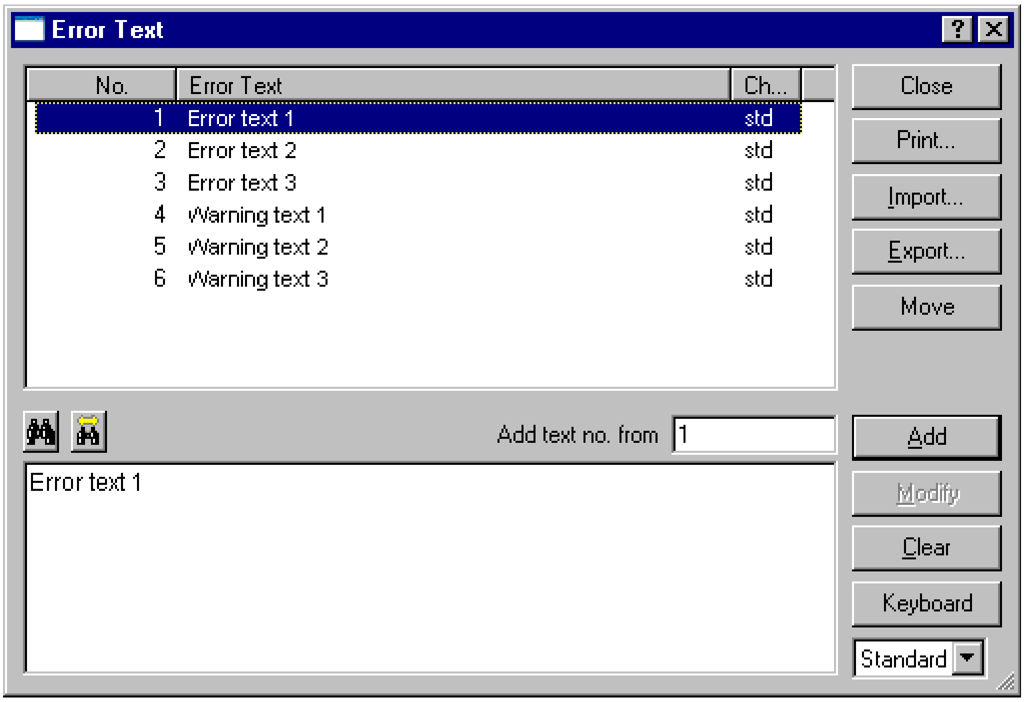
The list can be sorted by text (Standard text), by number (No.) or by character set (Ch.). For this double-click the appropriate column header to resort the list as required.

Characters that cannot be shown such as line breaks, tabs etc. are shown in the list with □ characters. A line break is entered with the 'Ctrl-Enter' key combination and is displayed as "\n".

The character set column is only visible if the Enhanced language settings option in the Enhanced Functions dialog has been checked.

See description under Define Text.

6.9.5 Error Text



Error Text

No.	Error Text	Ch...
1	Error text 1	std
2	Error text 2	std
3	Error text 3	std
4	Warning text 1	std
5	Warning text 2	std
6	Warning text 3	std

Add text no. from: 1

Error text 1

Standard

Error text can only be shown in Error Windows. It can also be shown on the MMI for display purposes and can also be printed out.

See also Printer Functions, Print Online All, Print Online Errors, Print History, Panel Printer Settings,

These texts can be as long as required. Only the first line is shown in the error window of the MMI. The text will be cut off on the right if the first line is longer than the width of the error window.

The longer the texts are, the smaller the font must be for the Error window so that the entire error text can appear on one line. The font colors are defined in the Project Settings dialog box in the Error Windows panel.

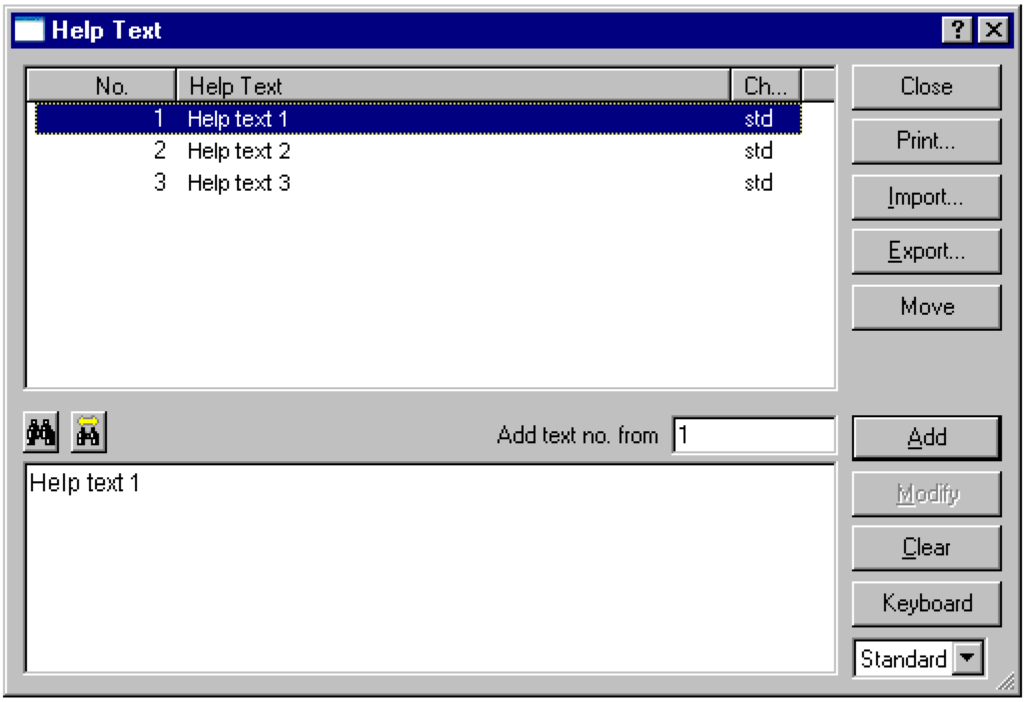
The list can be sorted by text (Standard text), by number (No.) or by character set (Ch.). For this double-click the appropriate column header to resort the list as required.

Characters that cannot be shown such as line breaks, tabs etc. are shown in the list with □ characters. A line break is represented by "\n".

The character set column is only visible if the Enhanced language settings option in the Enhanced Functions dialog has been checked.

See description under Define Text.

6.9.6 Help Text



No.	Help Text	Ch...
1	Help text 1	std
2	Help text 2	std
3	Help text 3	std

Add text no. from 1

Help text 1

Help text is shown in Help Window objects.

These texts can be any length and consist of several lines (although not exceeding the length of the window they are assigned to). The font style, font size and colors are defined in the Help window object.

The same text can be used several times.

A help window is called by the Help Button object. To remove a help window just touch on the screen. Several help texts cannot be displayed on the MMI at the same time. Further touch screen operations are not possible until the help window is closed.

A help window can also be linked directly with an error message. For this an appropriate help text can be assigned to an error tag together with the error text. If an error text is then displayed on the MMI, use a Function Key (Error line up or Error line down) to mark the text. The Error help function Key can be used to display the corresponding help text in the Help Window object.

The list can be sorted by text (Standard text), by number (No.) or by character set (Ch.). For this double-click the appropriate column header to resort the list as required.

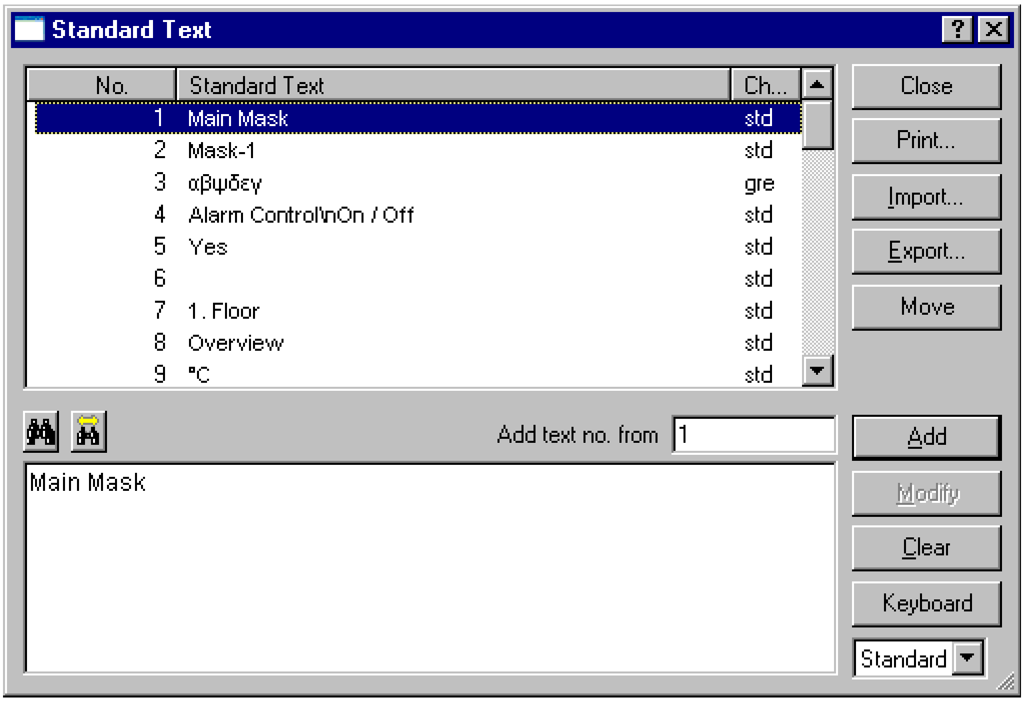
Characters that cannot be shown such as line breaks, tabs etc. are shown in the list with □ characters. A line break is represented by "\n".

The character set column is only visible if the Enhanced language settings option in the Enhanced Functions dialog has been checked.

See description under Define Text.

6.9.7 Text List

Text List



No.	Standard Text	Ch...
1	Main Mask	std
2	Mask-1	std
3	αβψδεγ	gre
4	Alarm Control\nOn / Off	std
5	Yes	std
6		std
7	1. Floor	std
8	Overview	std
9	°C	std

Add text no. from 1

Main Mask

The list can be sorted by texts, numbers or fonts. Select the appropriate column header to sort the list according to the selected criteria. Non-representable characters such as line breaks, tabulators etc. are represented in the list with the □ character.

The font column is only visible if the advanced language settings in the 'Enhanced Functions' dialog are selected.

Edit box

The texts in the entry field can be copied, cut and pasted in using the Clipboard. Press the CTRL and RETURN keys simultaneously to make a line break.

Note:
In order to show non-Roman character sets correctly, the appropriate keyboard layouts must be installed in Windows. Additional keyboard layouts can be added via "Control Panel" - "Keyboard Properties". Refer to the Windows ® manual for further information.

The entry can either be made via the keyboard of your computer or via the Keyboard toolbar.

Characters of non-Roman character sets can only be entered via the computer keyboard once the appropriate keyboard layout has been installed on the computer. Additional keyboard layouts can be installed via the Control Panel. Refer to the manuals of the Windows system used for further information.

Add

The text in the Edit field is added to the text list above it. The number for the text is automatically assigned. A text consisting of several lines is shown in the text list above it as one line with the characters □□ as the marker for the line breaks.

Line breaks are created by pressing CTRL and RETURN at the same time.

Tip:
In order to create several similar texts it is also possible to select a text already existing in the text list. After the text has been edited in the Edit field, the new text can be added by clicking the Add button.

Modify

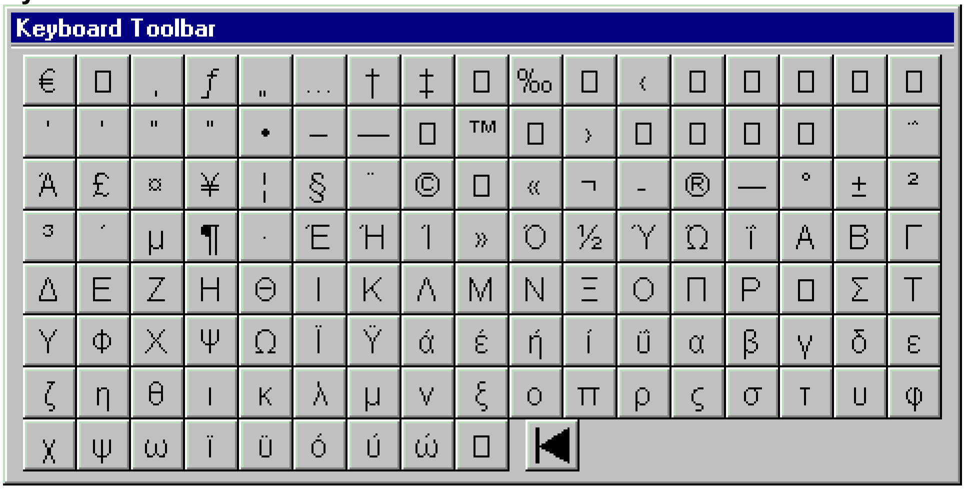
To modify an existing text, first select the text concerned in the text list. This will copy the text to the Edit field. If the text consists of several lines, it will also appear as several lines in the Edit field.

Once the modification has been made, the new text can be added to the text list by clicking the Modify button.

Delete

The selected text is deleted. See also the description Index Number.

Keyboard


Keyboard Toolbar
€ □ ‚ ƒ „ … † ‡ □ ‰ □ ‹ □ □ □ □ □
' ' " " • – — □ ™ □ › □ □ □ □ ΅
Ά £ ¤ ¥ ¦ § ¨ © □ « ¬ - ® ― ° ± ²
³ ΄ µ ¶ · Έ Ή Ί » Ό ½ Ύ Ώ ΐ Α Β Γ
Δ Ε Ζ Η Θ Ι Κ Λ Μ Ν Ξ Ο Π Ρ □ Σ Τ
Υ Φ Χ Ψ Ω Ϊ Ϋ ά έ ή ί ΰ α β γ δ ε
ζ η θ ι κ λ μ ν ξ ο π ρ ς σ τ υ φ
χ ψ ω ϊ ϋ ό ύ ώ □ ⏮

Clicking and re-clicking the Keyboard button activates or deactivates this keyboard toolbar as required. Texts can be entered via this keyboard or via the keyboard of your computer. This keyboard is particularly designed for entering texts requiring non-Roman characters. It contains all the characters of the character set selected (see also Charset (selection field)).

Use the ⏮ and ⏭ keys to move between the top (0..127) and bottom (128..255) set of ASCII characters. Each character set consists of up to 256 characters. Characters that cannot be shown such as line breaks, tab etc. are shown in the keyboard toolbar with a □.

See also Languages, Enhanced Functions

Add text no. from:

In order to create a text, the number it will get is the next unused number after this value. See also the description Index Number and Add.

Charset (selection field)

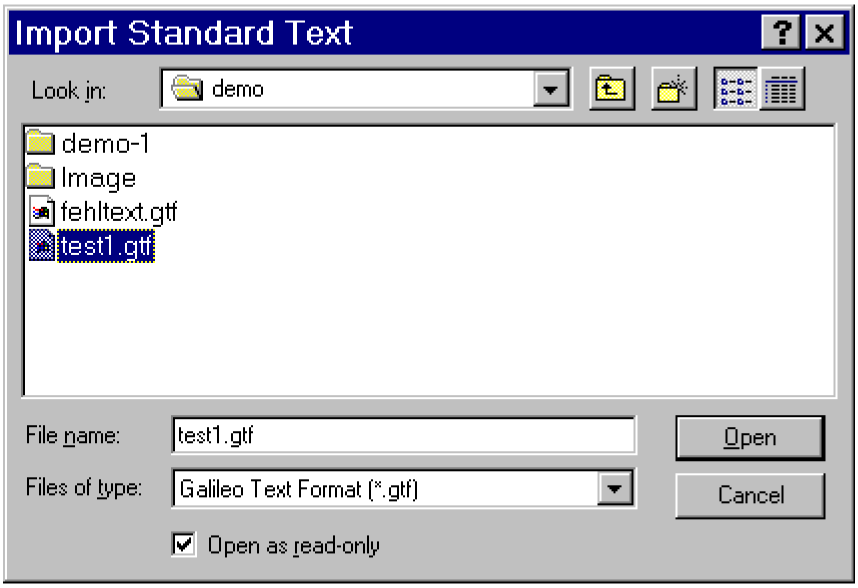
Different character sets can only be used if the 'Enhanced Functions' option in the 'Enhanced Functions' dialog has been selected. This selection field is otherwise not available.

Import...

This allows texts to be imported. The import and export files either have the extensions *.GTF or *.RTF. The GTF file format is described under Import/Export File Format (*.GTF or *.RTF). RTF is a standard Windows format. These two formats have the following advantages and disadvantages:

GTF	Advantages:	The texts can be written with any ASCII editor which does not replace tab characters with spaces.
	Disadvantages:	Characters from non-Roman character sets (e.g. Greek or Cyrillic) cannot be imported or exported using this file format.
RTF	Advantages:	Standard Windows formats
		Characters of different character sets (e.g. Greek, Cyrillic) can be used.
	Disadvantages:	The texts can only be edited with text editors supporting this file format (e.g. Microsoft Word ® or Microsoft WordPad ®).

To import text first select a file. For this use the standard file dialog box. Use the **"Files of type"** selection field to select the required file format.



Import Standard Text

Look in: demo

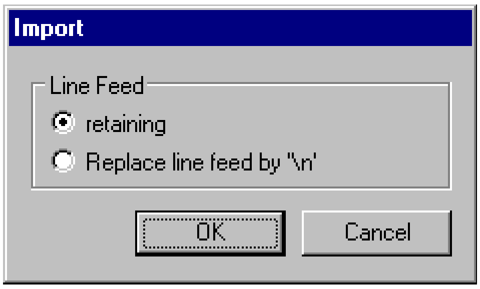
demo-1
Image
fehltext.gtf
test1.gtf

File name: test1.gtf

Files of type: Galileo Text Format (*.gtf)

☑ Open as read-only

Shows a selection of options for importing line breaks.



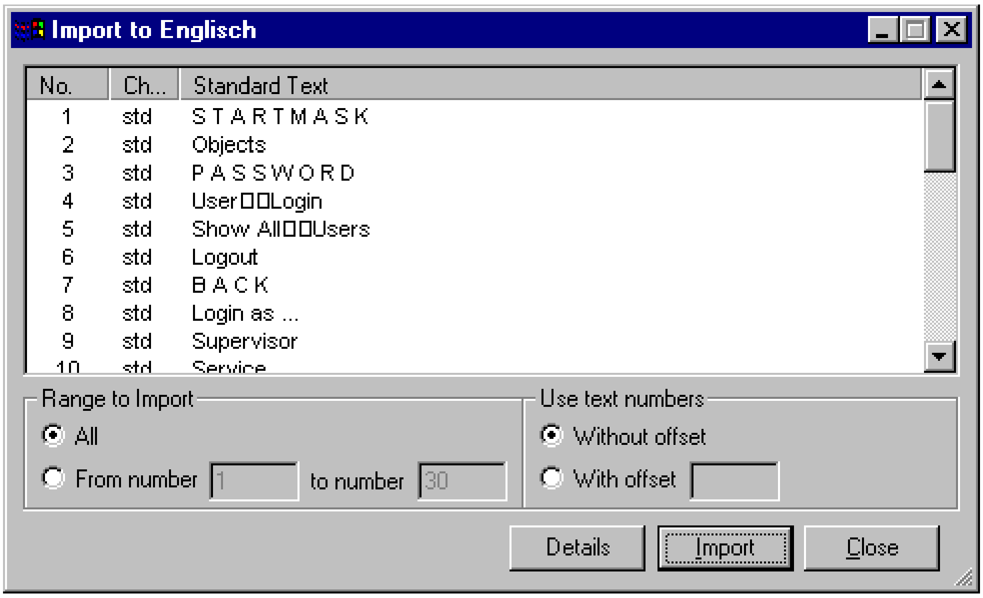
Import

Line Feed

● retaining

○ Replace line feed by '\n'

Once the file has been opened, the following dialog box will appear showing the list of texts from the import file:



Import to Englisch

No.	Ch...	Standard Text
1	std	S T A R T M A S K
2	std	Objects
3	std	P A S S W O R D
4	std	User□□Login
5	std	Show All□□Users
6	std	Logout
7	std	B A C K
8	std	Login as ...
9	std	Supervisor
10	std	Service

Range to Import

● All

○ From number 1 to number 30

Use text numbers

● Without offset

○ With offset

The 'Character set' column is only visible with enhanced language settings, see dialog Dialog 'Enhanced Functions'.

Range to Import

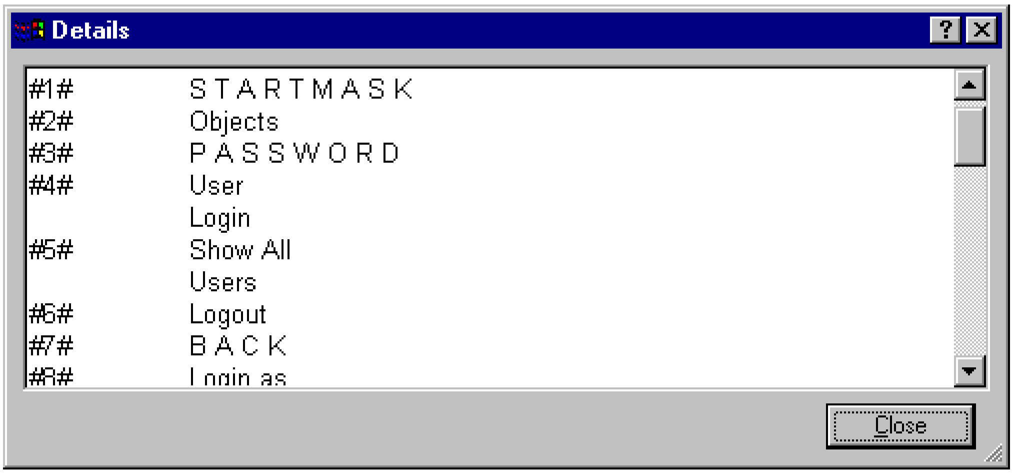
All the texts in the file can be imported or only a particular section of texts. The example above shows the import of all texts.

Use Text Numbers

The import allows the text numbers to be transferred directly or with an offset. The numbers will be generated by add or subtract the offset.

Details

This button is available when using the RTF file format. Clicking this button shows the texts to be imported within a dialog, with the first column showing the text number between two # characters.

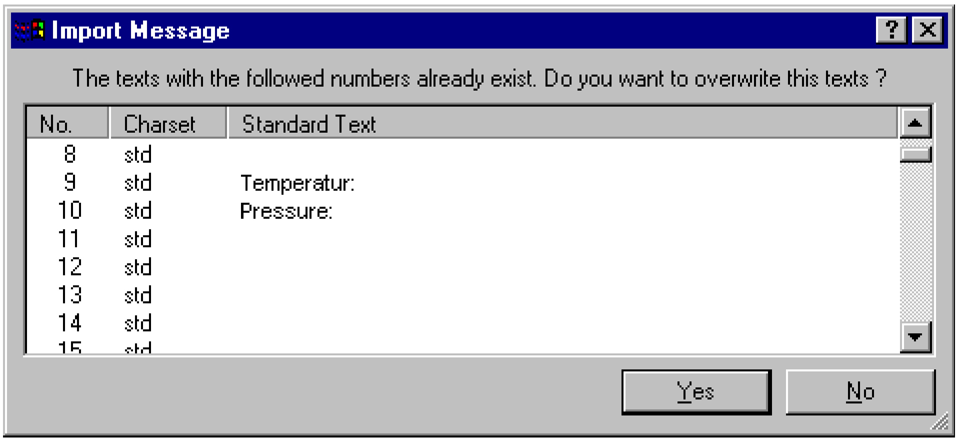


Details

```
#1#          S T A R T M A S K
#2#          Objects
#3#          P A S S W O R D
#4#          User
             Login
#5#          Show All
             Users
#6#          Logout
#7#          B A C K
#8#          Login as
```

Import

If the texts are available, the following dialog will appear when the texts are imported.



Import Message

The texts with the followed numbers already exist. Do you want to overwrite this texts ?

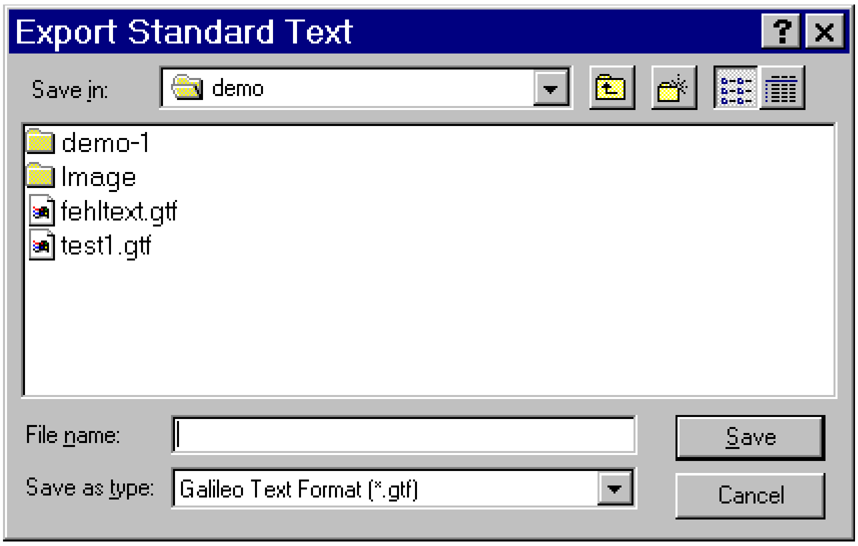
No.	Charset	Standard Text
8	std	
9	std	Temperatur:
10	std	Pressure:
11	std	
12	std	
13	std	
14	std	
15	std	

Click Yes to overwrite the existing texts or No to return to the previous dialog in which the text number offset can be adjusted (see Import...).

Export...

Texts can be exported in the file formats *.GTF and *.RTF. The two file formats are described in chapter Import.... The chapter Import/Export File Format (*.GTF or *.RTF) also gives a detailed description of the GTF file format.

To export text first specify the file name and file type. For this use the standard file dialog box.



Export Standard Text

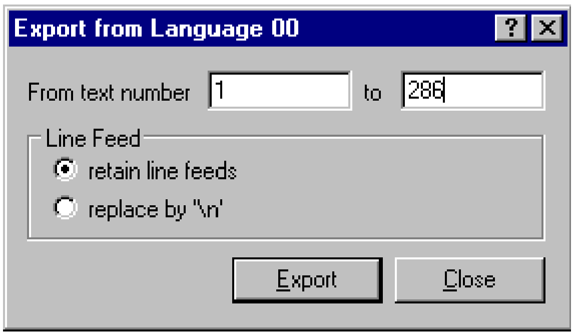
Save in: demo

demo-1
Image
fehltext.gtf
test1.gtf

File name:

Save as type: Galileo Text Format (*.gtf)

Click Save to close the dialog box and to open the following dialog.



Export from Language 00

From text number 1 to 286

Line Feed
● retain line feeds
○ replace by '\n'

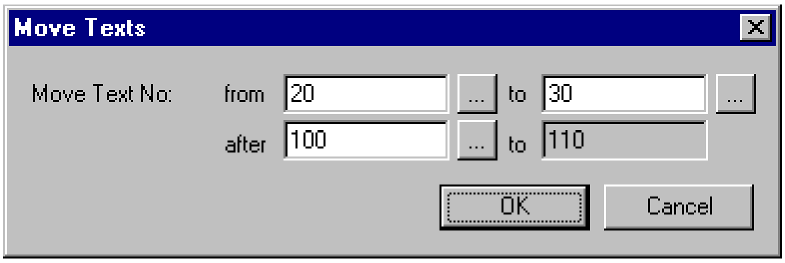
This shows the number of the texts to be exported. Click OK to save the text range selected beforehand in the specified file. This file can be inserted into the project using the Import... function. It is also possible to modify this file with external programs.

Line breaks

Defines how line breaks within texts are to be represented in the exported file.

Click Close to abort the export.

Move



Move Text No: from 20 ... to 30 ...
after 100 ... to 110

Moves a range of texts. The moving of texts does not have any effect on where these texts are used.

Note:
To ensure that the defined texts can be managed easily, it is advisable to structure the texts in different ID ranges. The Move function is useful for organizing already defined texts.

Print...

This is used for printing out a table with all texts of the current text type, sorted by text number.

Example:

Index	Standard text
1	Machine parameters
2	Machine speed
3	No changes should be made in this mask if the door is open!
4	Next page
5	Previous page

...

The printout is provided with a header showing the name of the project and its directory, the language, page number, time and date.

Import/Export File Format (*.GTF or *.RTF)

The two file formats *.RTF and *.GTF for import and export are described in chapter Import....

The file format of Import/Export files (*.GTF) is as follows:

#Index number#	**<TAB>**Text**<CR><LF>**
#Index number#	**<TAB>**Text: 1st line **<CR><LF>**
	<TAB>Text: 2nd line**<CR><LF>**
#Index number#	**<TAB>**Text**<CR><LF>**

This is as follows:

#1#	**<TAB>**Machine parameter**<CR><LF>**
#2#	**<TAB>**Machine speed**<CR><LF>**
#6#	**<TAB>**Machine speed**<CR><LF>**
	<TAB>in this mask if the door **<CR><LF>**
	<TAB>is open !**<CR><LF>**
#8#	**<TAB>**Next page **<CR><LF>**
#9#	**<TAB>**Previous page **<CR><LF>**

etc.

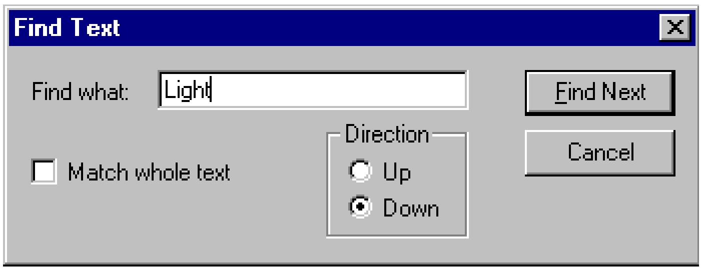
Creating GTF files

An Import/export file can be created with any text editor. The file can also be created and edited with Microsoft EXCEL® by saving the file in Text format (with Tab delimiters) (*.txt)".

Creating RTF files

An RTF file can be created with any editor supporting the standard Windows ® RTF format. Programs such as Microsoft Word ® or Microsoft WordPad ® are examples of this.

Search



Find what: Light

□ Match whole text

Direction
○ Up
● Down

Match whole text

The required text must match the entered search string completely.

Direction

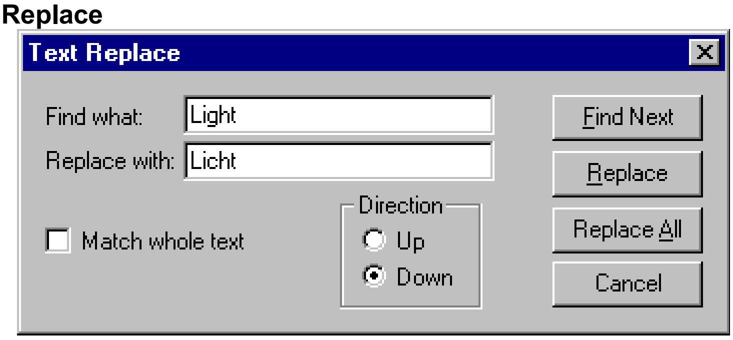
Search direction in the text list.

Find Next

Moves to the next entry in the text list that matches the entered search string.

See also Replace

Replace



Find what: Light

Replace with: Licht

□ Match whole text

Direction
○ Up
● Down

Match whole text

The required text must match the entered search string completely.

Direction

Search direction in the text list.

Find Next

Moves to the next entry in the text list that matches the entered search string.

Replace

If the selected list entry matches the entered search string, this is replaced by the new text. If the entered search string is not found in the selected list entry, the search will move to the next entry containing the search string.

Replace All

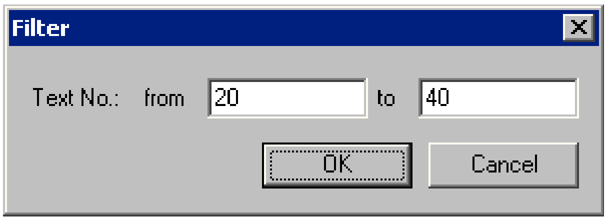
Replaces all the search strings found with the new text.

See also Search

Show Empty Text

You can use the right mouse button in the text list to activate or deactivate this option. If this option is activated, the empty texts are also displayed. See also the description Index Number.

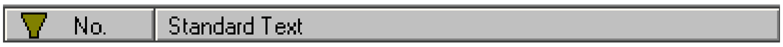
Filter



Text No.: from 20 to 40

As several hundreds or thousands of texts can be defined in the text lists of large projects, selecting texts that are not shown in the visible area of the list can be a tedious process. The filter can simplify this by defining a text ID range that is to be displayed in the text list. All texts outside of this range are thus not shown in the text list.

An active filter is indicated by a symbol in the column header text.



The filter is project-based and is saved with the project.

The filter is retained until it is right-clicked and deleted with the 'Delete Filter' command. Every text type: Standard , Error and Help Texts has its own filter.

6.10 Define Printing Form

6.10.1 Define Printing Form

Tags can be printed out using printing forms or printing reports that can be defined by the user.

The following describes how to define printer forms.

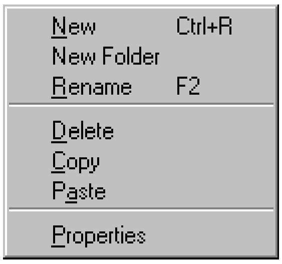
The number of different printing forms per project is optional. Printing forms are defined using two different dialog boxes:

- Form Properties
- Form Entries

The printer settings such as baud rate, data bits etc. must be entered in the Panel Printer Settings dialog.

See also Printer Functions, Print options (Overview), Edit

6.10.2 Context Menu



New

Generates a print form.

New Folder

Create a new folder.

Rename

Modifies the name of the print form.

Delete

Deletes the print form.

Copy

Copies the print form to the Clipboard.

Paste

Adds a print form into the project from the Clipboard.

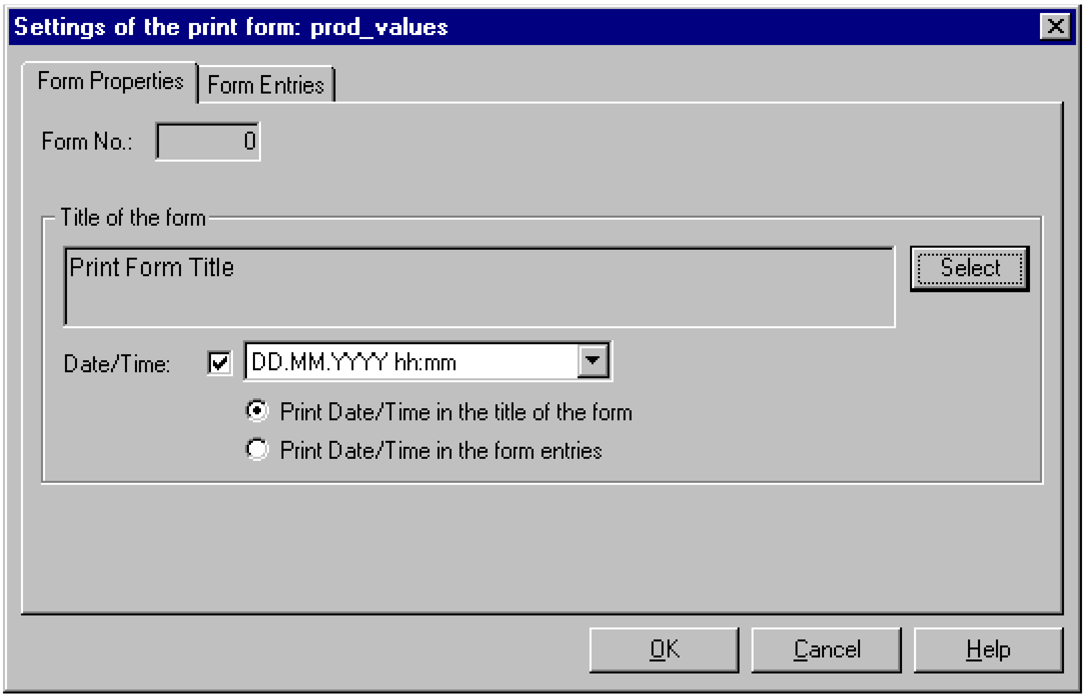
Properties

Opens the form properties of the print form.

6.10.3 Form Properties

Form Properties

This dialog is used to define the number of forms and form settings such as title, time/date entry etc. The form settings for texts and tag values are made in the Form Entries dialog box.



Settings of the print form: prod_values

Form No.: 0

Title of the form

Print Form Title

Date/Time: ☑ DD.MM.YYYY hh:mm

● Print Date/Time in the title of the form

○ Print Date/Time in the form entries

Form No.

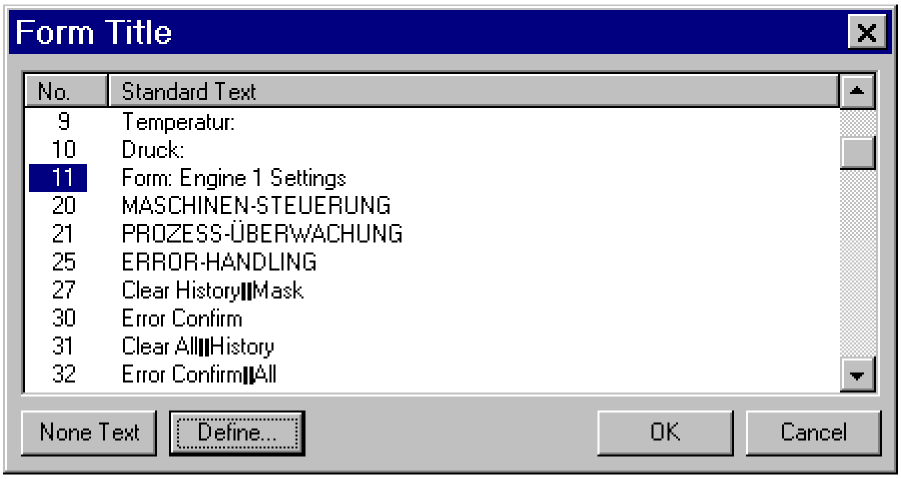
This field displays the current form number. This number must be used as a parameter via the special function.

Title of the Form

This field shows the form title. Click the Select button to select the title required.

Select

Click this button to open the following dialog for selecting the form title:



Form Title

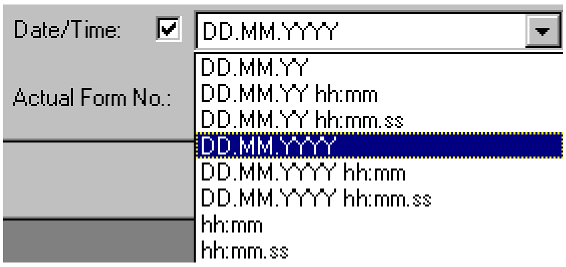
No.	Standard Text
9	Temperatur:
10	Druck:
11	Form: Engine 1 Settings
20	MASCHINEN-STEUERUNG
21	PROZESS-ÜBERWACHUNG
25	ERROR-HANDLING
27	Clear History▌Mask
30	Error Confirm
31	Clear All▌History
32	Error Confirm▌All

Refer to the section Text for information about the fields of the above dialog.

Date/Time

When this check box is active, the printing form is printed out with the date and time.

The display format of time and date can be set in the field next to it.

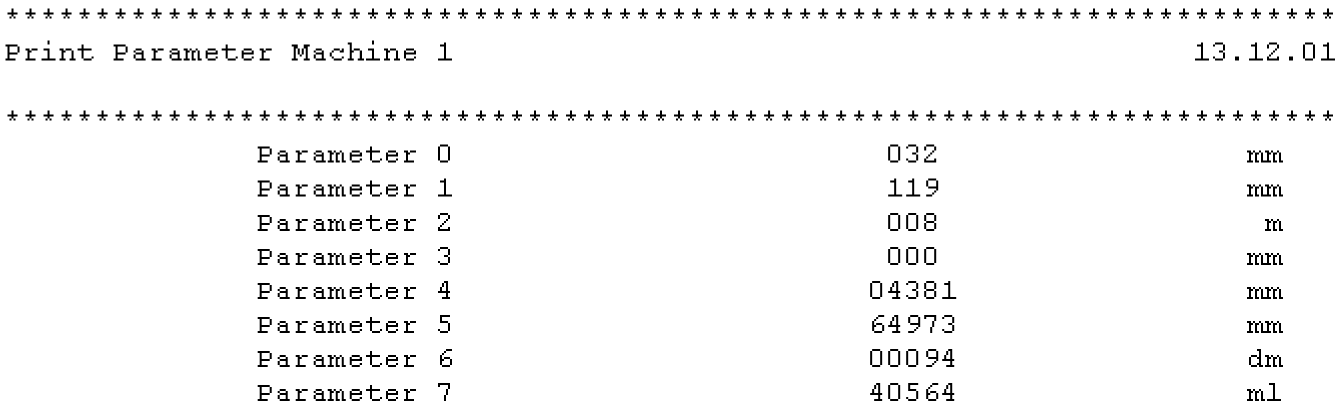


Date/Time: ☑ DD.MM.YYYY

Actual Form No.:

Print Date/Time in the title of the form

When this check box is active, the time and the date are printed in the form title.

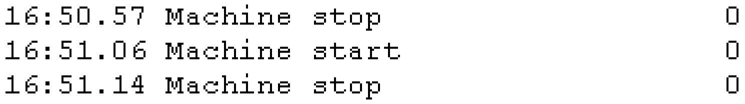


```
*************************************************************************
Print Parameter Machine 1                                        13.12.01

*************************************************************************
                  Parameter 0                  032                  mm
                  Parameter 1                  119                  mm
                  Parameter 2                  008                   m
                  Parameter 3                  000                  mm
                  Parameter 4                 04381                 mm
                  Parameter 5                 64973                 mm
                  Parameter 6                 00094                 dm
                  Parameter 7                 40564                 ml
```

Print Date/Time in the form entries

When this check box is active, the time and the date are printed on every form entry. This makes it possible to create report logs with a time stamp. See also Special Function Print Form No. xy.

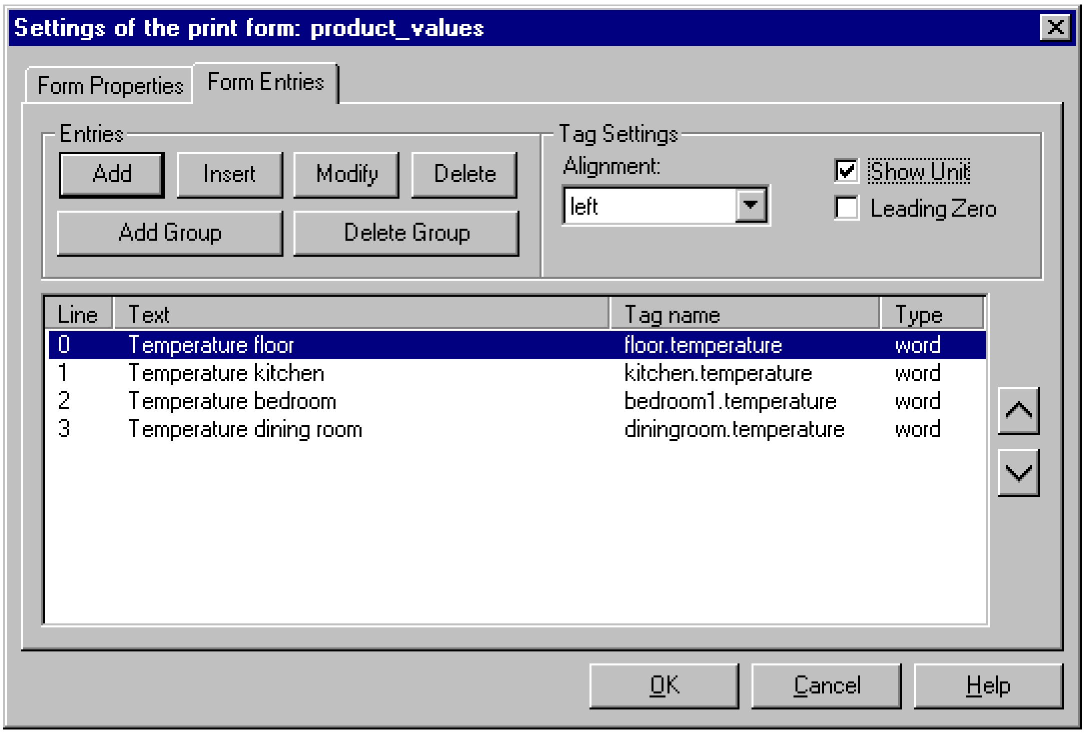


```
16:50.57 Machine stop           0
16:51.06 Machine start          0
16:51.14 Machine stop           0
```

Example: In order to print out form entries only, a form title must not be defined.

6.10.4 Form Entries

Form Entries



Alignment: left

☑ Show Unit

□ Leading Zero

Line	Text	Tag name	Type
0	Temperature floor	floor.temperature	word
1	Temperature kitchen	kitchen.temperature	word
2	Temperature bedroom	bedroom1.temperature	word
3	Temperature dining room	diningroom.temperature	word

Add

Click this button to add an entry to the end of the list. The settings of the new entry are made in the Form Entry dialog.

Insert

Click this button to insert an entry at this point of the list. The settings of the new entry are made in the Form Entry dialog.

Modify

The settings of the currently selected entry can be changed in the Form Entry dialog.

Delete

The currently selected entry is deleted from the form.

Add Group

Adds a group of tags. The description text of the tag is used as a text. This function is only visible if the enhanced setting for parameter list is activated.

Delete Group

Deletes a group of tags from the entries. This function is only visible if the enhanced setting for parameter list is activated.

Alignment

Selects the left-justified, right-justified or centered printing of the tag values of the form.

Show Unit

A unit of measure can be configured for each value tag. If this check box is activated, the units of measure of the tag are printed out.

Leading Zero

If this check box is activated, the value is always displayed with the complete number of digits of the tag. Leading zeros ("0" characters) are displayed if the value is less than the maximum value.

Example of a tag with 5 digits:

Without zeros : 12.0
With zeros : 0012.0

Entry move up

To move up the selected entry touch the button ∧.

Entry move down

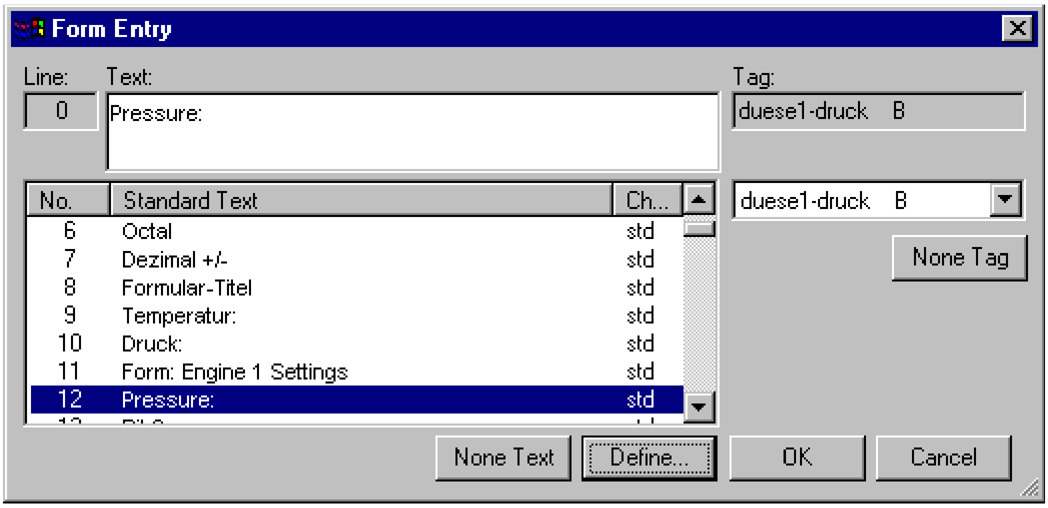
To move down the selected entry touch the button ∨.

See also Units and Conversion Factors

6.10.5 Form Entry

Form Entry

Clicking the Add, Insert and Modify buttons opens the following dialog for setting the selected entries.



Form Entry

Line: 0

Text: Pressure:

Tag: duese1-druck B

No.	Standard Text	Ch...
6	Octal	std
7	Dezimal +/-	std
8	Formular-Titel	std
9	Temperatur:	std
10	Druck:	std
11	Form: Engine 1 Settings	std
12	Pressure:	std

duese1-druck B

Line

Displays the line number of this form entry

Text

Displays the text of this form entry

Standard Text List

The list of available standard texts.

None Text

Clicking the "None Text" button will enter a blank text for this form entry.

Define...

Click the Define... button in the Standard Text Definition dialog, if the text required does not already exist. You can then enter new text or edit an existing text in this dialog.

Tag

Selects the tag for this form entry

This list contains all value and bit tags in the project. Selecting a tag assigns it to the selected form entry.

None Tag

Click the None Tag button in order to not assign a tag to this form entry. No tag value will then appear on this line.

List of form entries

The list of form entries features the following columns:

- Line
- Text

#• ÚClicking the Insert, Modify and Delete buttons affect the currently selected entry.

The list can only be selected if at least one line was defined, see also Add**.**

Tag Alignment

Use this box to select whether the printout of the tag value is to be left-justified, right-justified or centered.

Show Unit

A unit of measure can be configured for every value tag. If this check box is active, the unit of measure of the tag is printed out.

Leading Zero

When this check box is active, the value is always shown with the maximum tag width. Leading zeros ("0") will be placed before the value if it is below the maximum value.

Example of a tag with 5 digits:

without zeros	:	12.0
with zeros	:	0012.0

See also Units of Measurement and Conversion Factors

6.11 Define Graph Blocks

6.11.1 Define Graph Blocks

Graph blocks are used by Graph objects for displaying tag values over time.

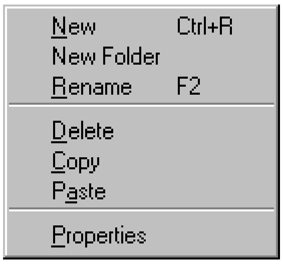
Graph blocks can be used in Standard or Enhanced mode. The following describes the differences between the two.

6.11.2 Differences between Standard and Enhanced Graph Blocks

Functions	Standard	Enhanced
The most recent measured value is always shown on the right of the display See Graph Object	No	Yes
The most recent measured value moves across the display See Graph Object	Yes	No
Archive reset when starting the plot	Optional	Yes
Add the new measured values to the existing data in the archive when starting the plot	Optional	No
Use of special functions of the group Graph Functions: e.g. Scroll Left, Scroll Right, Scroll Left (Ruler), Scroll Right (Ruler) , Zoom In, Zoom Out	No	Optional
Zoom functions (X and Y axes) possible (see Zooming Settings (X axis), Zooming Settings (Y axis), Zoom In, Zoom Out)	No	Yes
Display the start and finish time of the currently visible measured values (see Display Time Graph Start, Display Time Graph End)	No	Optional
Use of a ruler for the history trace (see Ruler Settings)	No	Optional
Maximum number of measured values: (see also Project-related limit values and No. of Samples)	Mask width in pixels	RAM memory
Save data in a file (possible only with specific device types)	No	Yes

Note:
Galileo versions up to 3.0x only support the **Standard Mode**.

6.11.3 Context Menu



New

Generates a new graph data block.

New Folder

Create a new folder.

Rename

Modifies the name of the graph data block.

Delete

Deletes the graph data block.

Copy

Copies the graph data block to the Clipboard.

Paste

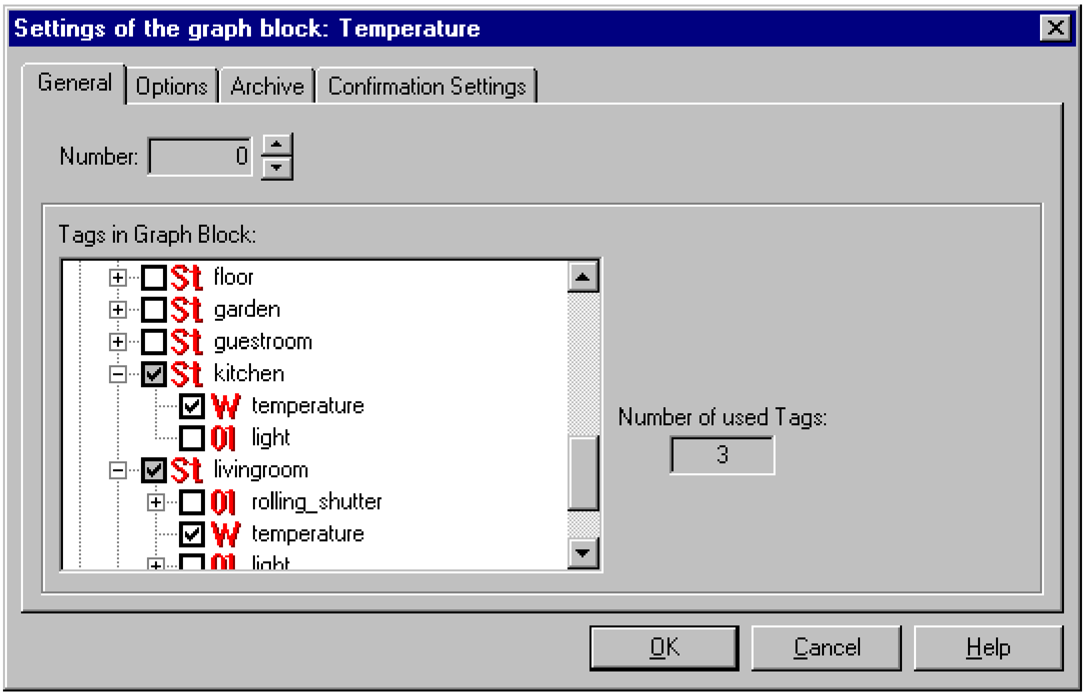
Adds a graph data block into the project from the Clipboard.

Properties

Opens the property page of the graph data block.

6.11.4 General

General



Number: 0

Tags in Graph Block:

- □ St floor
- □ St garden
- □ St guestroom
- ☑ St kitchen
  - ☑ W temperature
  - □ 01 light
- ☑ St livingroom
  - □ 01 rolling_shutter
  - ☑ W temperature
  - □ 01 light

Number of used Tags: 3

See also Graph and Graph Definitions

Number

Each graph block is assigned a unique number. These numbers are used by the special functions Start/Stop Graph 0..99 .

Tags in Graph Block

This list contains all the tags that are assigned to graph blocks.

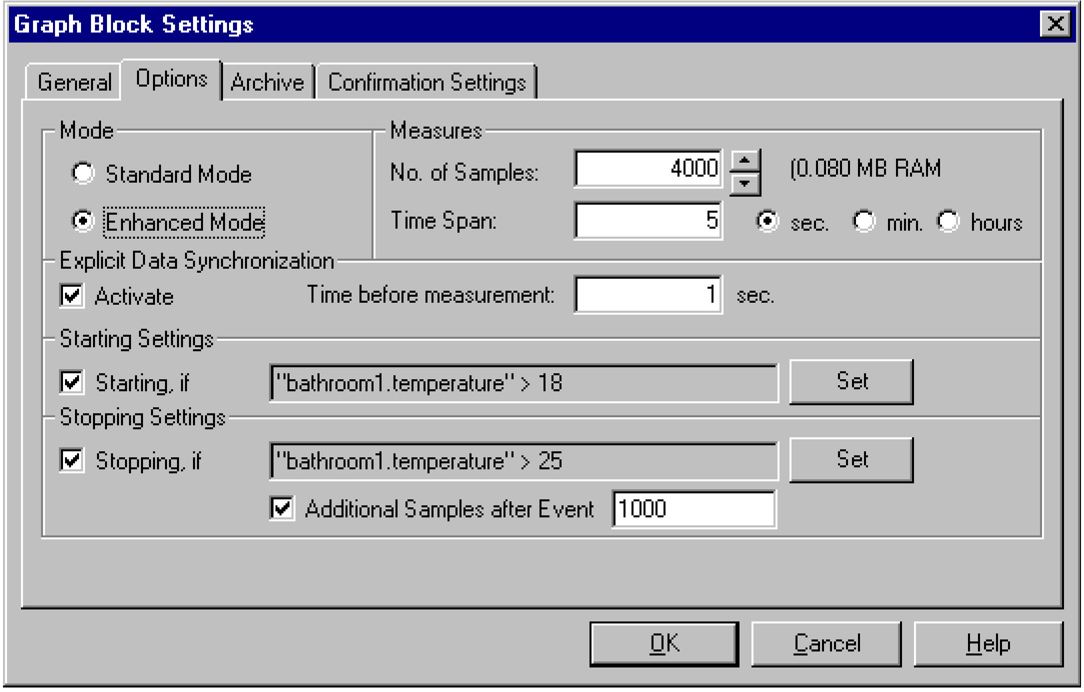
Note:
If the graph plot is started, tags in graph data blocks are scanned in all masks containing these tags. It is therefore recommended that the tags are assigned to as few data blocks (arrays, structures) as possible.

Number of used Tags

Displays the number of tags assigned to the graph block.

6.11.5 Options

Options



Graph Block Settings

General | Options | Archive | Confirmation Settings

Mode
○ Standard Mode
● Enhanced Mode

Measures
No. of Samples: 4000 (0.080 MB RAM
Time Span: 5 ● sec. ○ min. ○ hours

Explicit Data Synchronization
☑ Activate Time before measurement: 1 sec.

Starting Settings
☑ Starting, if "bathroom1.temperature" > 18 Set

Stopping Settings
☑ Stopping, if "bathroom1.temperature" > 25 Set
☑ Additional Samples after Event 1000

Mode Settings

Selection between Standard mode and Enhanced mode

See also Differences between Standard and Enhanced Graph Blocks and Graph-Object

No. of Samples

Max. number of measured values within the graph block. The maximum number of measured values is limited by the size of the RAM, flash and hard disk memories and therefore varies according to the device concerned (see also Project-related limit values). Ensure that the device is provided with sufficient RAM and flash memory.

The right of the field shows the size of the working memory required by the graph block concerned. This memory size depends on the number of measured values and the number of tags in the graph block.

See also Number of used Tags, Project-related limit values

Time Span

Defines the time interval for recording tag values.

The time interval can be set between 1 second and 500 000 hours.

It must be ensured that the PLC protocol used also supports this time interval. When transferring large data volumes between the MMI and the PLC, the time interval can no longer be guaranteed for recording the data. Small time intervals and large data volumes may slow down the MMI's response to operations.

See also Polling rate in chapter Definition of Tags

Explicit Data Synchronization

This setting enables the tags in this defined graph block to be synchronized explicitly before the plotting. The synchronization time before plotting can be defined in seconds.

Note:
This synchronization is carried irrespective of the Polling rate. defined for the tags.

The time before plotting must be less than the Time Span.

Starting / Stopping Settings

These two options can be used to set the conditions for starting and stopping the plotting of the graph block.

The **plotting** of the graph block **is started** if all of the following conditions are fulfilled:

- the start condition is fulfilled
- the stop condition is not fulfilled
- plotting has currently not been started

The **plotting** of the graph block **is stopped** if

- the stop condition is fulfilled

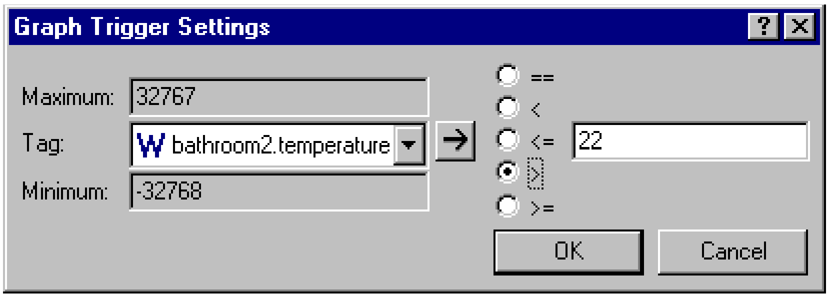
The start or stop settings have no effect on the special functions Graph Start/Stop Functions, i.e. when the special function is running the plotting is started or stopped irrespective of the start / stop settings.

Additional Samples after Event

Stop setting can specify the generation of additional samples, i.e. when the stop condition is valid, plotting is continued for the specified number of measured values before it is stopped.

Set

The **Set** button and the following dialog enable the start and stop settings for plotting the graph block to be modified.



Graph Trigger Settings

Maximum: 32767

Tag: bathroom2.temperature

Minimum: -32768

○ ==
○ <
○ <=
● >
○ >=

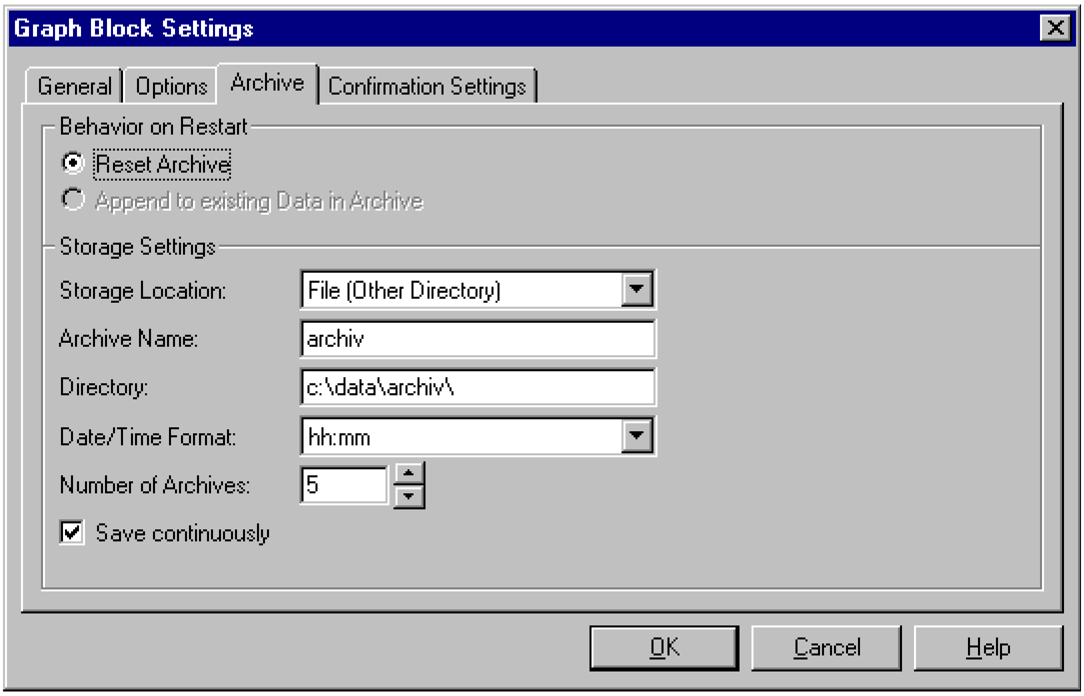
22

The Tag drop-down list box can be used to select the tag required. The **Maximum** and **Minimum** fields specify the limit values for the selected tag. The comparison type can also be selected and the constant entered here.

Button →
Clicking this button will call up the Definition of Tags dialog immediately.

6.11.6 Archive

Archive



Behavior on Restart

● Reset Archive

○ Append to existing Data in Archive

Storage Settings

Storage Location: File (Other Directory)

Archive Name: archiv

Directory: c:\data\archiv\

Date/Time Format: hh:mm

Number of Archives: 5

☑ Save continuously

This panel is used for the archive settings of a graph block. Some of these settings are only possible if **Enhanced mode** (see Mode Settings) has been selected. Furthermore, some options are not supported by all device types.

See also Selecting the MMI type and the chapter "Differences between the Runtime Systems" in GRS.HLP

Reset Archive

If this option is selected the graph window is cleared when plotting starts and the plotting starts at the left-hand edge of the window.

See also Special Functions Start/Stop Graph 0..99 and Starting / Stopping Settings

Append to existing Data in Archive

Add the new measured values to the existing data in the archive when plotting starts. This option is only available if the **Standard Mode** attribute on the Options panel has been selected.

Storage Settings

These settings can only be modified if the **Enhanced Mode** attribute on the Options panel has been selected.

Note:
Furthermore, these options are only available with specific device types.

See also Archive File (*.GDB), Selecting the MMI type and the chapter "Differences between the Runtime Systems" in GRS.HLP

Storage Location

The following options are possible:

No (RAM) : The measured value data is only located in the volatile memory (RAM memory), i.e. data is lost when the device is switched off.

File (DATA-Directory) : The data is saved in a file in the project directory (DATA*.*). The subdirectory is specified in the Directory field.

File (different directory) : The data is saved in the selected directory. If the directory does not exist, it is created by the runtime program. The directory is specified in the Directory field.

The Number of Archives, Archiv Name, Directory and Date/Time Format and Continuously storing fields are deactivated if "No (RAM)" is selected.

Archive Name

Definition of the archive name for data storage of the graph block

If the Number of Archives field is set to 1, the archive name will match the file name. When more than one archive file is used, the archive name will be incremented by the number. The file suffix for archive files is *.GDB.

Directory

This field is used to select the directory for storing the archive data of the graph block. These settings are not necessary depending on the setting in Storage Location.

Date/Time Format

Select a time/date format from this drop-down list box. This selection is only necessary if the archive data is saved in a file.

See also Storage Location and Archive File (*.GDB)

Number of Archives

Defines the number of archive files.

If the number of archive files is greater than one, the graph block is moved to the next archive file every time recording is started. The archives are assigned the specified archive names with an additional number (1..n). The number of archives can be specified. When the last archive is filled, this is continued with the first archive. If, for example, the number of archives was set to 3 and the archive name has been defined as "Archive", the archive file names will then be: "Archiv1.gdb", "Archiv2.gdb" and "Archiv3.gdb".

Plotting of the graph block begins automatically when the unit is restarted if this was active when the unit was switched off. The system will change automatically to the next archive in this case.

See also Archiv Name, Start/Stop Graph 0..99

Continuously storing

If this option is selected, the graph data is continuously stored in a file (*.TDB). The data is stored in the binary TDB file in a kind of ring buffer. When terminating the Start/Stop Graph 0..99_ function or when the MMI unit is switched off and on again, the data is automatically saved in the ASCII file *.GDB (see Archive File (*.GDB)).

If this option is not selected, the graph data is saved in the RAM (volatile memory). The Save Archive File and Save Archive File As functions can be used to save the data in a file.

Note:
This option is only operable with certain device types.

See also Storage Location, Archive Name, Directory and Number of Archives

Archive File Format (*.GDB)

Archive File (*.GDB)

With certain device types the data of graph blocks can be saved in (*.GDB) files. The file is saved in ASCII format, i.e. as a text that can be processed by standard editors such as Microsoft Excel®). The file suffix for archive files is ***.GDB**.

See also Load Archive File, Save Archive File, Save Archive File As, Delete Archive File and Continuously storing

The file is divided into two sections File Header and Data Block:

File Header

The file header contains the following data:

File:	See Storage Settings and Storage Settings
Graph Block No.:	See Number in the chapter Define Graph Blocks
Tag Count:	See Number of used Tags
Time Span in Seconds:	See Time Span
Start Time:	Start time of plot
Start Time File:	Start time the first message in Data Block
Stop Time:	Stop time of plot
Sample Count:	Number of measured values contained in the file (see also No. of Samples)

The individual columns are separated by **Tabs** (ASCII character 09).

The file header entries are for information purposes and are only partly included when an archive file is loaded.

Data Block

The data range contains the effective data of the graph block. This is saved in tabular form. This data range starts with the **ID #GDB#** and is compulsory. The ID is followed by the table header with the time/date format in the first column and the tag names in the subsequent columns. The measurement is then carried out in one line. The first column records the time of the measurement and the remaining columns contain the corresponding tag values at the time specified.

See also Tags in Graph Block**, Date/Time Format** in chapter Storage Settings and Example of archive file

#GDB#

DD.MM.YYYY hh:mm:ss	**Tag 1**	**Tag 2**	**Tag 3**	**Tag 4**	**Tag n**

The individual columns are separated by **Tabs** (ASCII character 09).

See also Example of archive file

Example of archive file

File:	DATA\archive.gdb
Graph Block No.:	2
tag Count:	5
Time Span in Sec.:	4
Start Time:	07.02.2000 15:03:11
Start Time File:	07.02.2000 15:03:11
Stop Time:	07.02.2000 15:03:31
Sample Count:	6

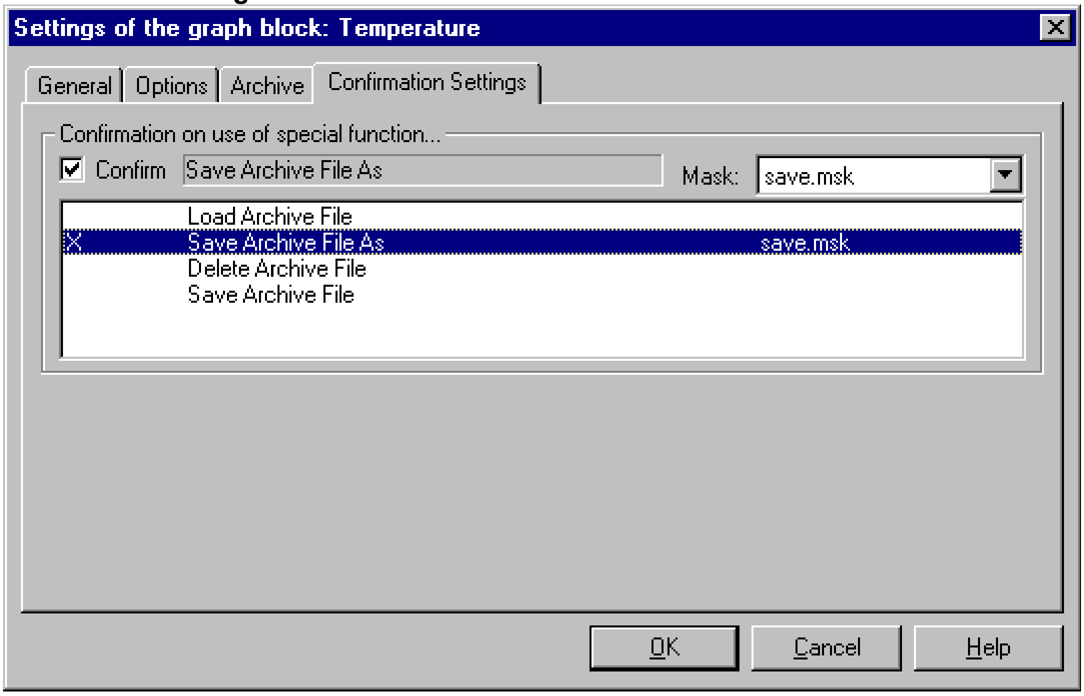
#GDB#

DD.MM.YYYY hh:mm:ss	**Tag 1**	**Tag 2**	**Tag 3**	**Tag 4**	**Tag 5**
07.02.2000 15:03:11	15	247	-762	34572	9753
07.02.2000 15:03:15	31	63	-762	29631	6452
07.02.2000 15:03:19	37	24	-747	32974	7502
07.02.2000 15:03:23	61	13	-687	32974	8123
07.02.2000 15:03:27	81	6	-635	30561	8339
07.02.2000 15:03:31	93	-5	-598	27463	8576

The individual columns are separated by **Tabs** (ASCII character 09).

6.11.7 Confirmation Settings

Confirmation Settings



Confirmation on use of special function...

☑ Confirm Save Archive File As Mask: save.msk

	Load Archive File	
X	Save Archive File As	save.msk
	Delete Archive File	
	Save Archive File	

These settings are only possible in Enhanced mode (see Mode Settings) .

This list contains all special functions that can be provided with a confirmation check.

If a special function is selected from the list, the required settings can be made:

- **Confirmation** field: Confirmation check used yes / no
- Mask field: This specifies the mask that is displayed when the special function is called up

Note:
The **Mask** field contains all "Keyboard" type masks (see Edit).

A more detailed description of confirmation checks and an example of this kind of mask is given in section Confirmation Check in the section on Recipe Management.

6.12 Recipe management

6.12.1 Recipe management

A recipe management object enables several tag values to be saved under a specified name and loaded as required.

The two different kinds of recipe management objects provided by Galileo depend on whether Standard mode and Enhanced mode is used. The following describes the differences between the two.

See Standard Mode, Enhanced Mode

The sum consisting of the tag values, the name, and a write protection option is specified as a recipe entry.

A recipe entry consists of:

- Name of recipe entry
- Values of all tags that are assigned to the recipe object (see also recipe tags)
- Option: Write protection on / off
  If write protection is activated, the data of the recipe entry can no longer be overwritten (see also write protection (standard mode)).

All values of the different recipe entries are saved on the MMI in the "RecipeName**.TAB**" file (see also recipe file (*.TAB)).

See also limits of the recipe management

6.12.2 Limits of the recipe management

The recipe management object has the following limits:

Max. number of tags	:	2000
Max. number of recipe entries	:	1000
max. file size recipe file (*.TAB)	:	see Recipe Management in Chapter project-related limit values

The recipe file size is displayed with the recipe definition under Info.

See also No. of Recipe Entries, Recipe Tags

6.12.3 Recipe file (*.TAB)

The recipe file contains all recipe management data such as tag values, names of recipe entries and write protection ON/OFF.

When the project is compiled, a file with the name of the recipe object and the extension ".TAB" is generated. If the number of recipe entries or tags assigned to the recipe changes, the file is converted during compiling. Data such as the names of recipe entries and tag values are retained during compiling.

This file contains all values of the different recipe entries in the following form. The columns are separated by a tab:

*	Recipe Entry	Tag 1	Tag 2	Tag 3	Tag n
	beans	0	543	10	245
	chilli con carne	1234	-432	-8376	8821
	peas	8765	-1234	8764	1289
*	soup	872	14	61	0
	-				
	bacon	3456	754	234	-758
	goulash	5437	547	984	164
	carrots	1876	19823	6472	-2843

See also Recipe Selection List.

If a * is in the first column, this means that the recipe entry is write protected.

The file can be edited with any text editor or, for example, Microsoft Excel® providing that the program supports text files with tabulators.

Float tags:

Float tags can be entered in the following number formats:

- ±x.xxxxxxE±xx (max. 6 decimal places)
- Floating point number   (max. 13 places including decimal point)

See also Changing Recipes (Standard Mode), No. of Recipe Entries are write protectable by Users of Level 0, No. of Recipe Entries are write protectable by Users of all Levels, Recipe Selection List, Backup Recipe

6.12.4 Differences between Standard and Enhanced Recipe management

Functions	Standard	Enhanced
Object shown in the mask in list form	No	Yes
Object shown in the mask as button	Yes	No
This list of all recipe entries can be shown in any size and color.	No	Yes
Support of special functions: Change Recipe Entry Name, Copy Recipe Entry, Clear Recipe Entry, First Line, Last Line, Line Down, Line Up, Load Recipe Entry, Page Down, Page Up, Paste Recipe Entry, Restore Default Values, Save Recipe Entry As, Save As/Load Recipe Entry, Select Loaded Recipe Entry, Save Recipe Entry As userdef., Save As/Load Recipe Entry userdef., Find Recipe Entry, Find Recipe Entry (start), Find Recipe Entry userdef., Find Rcp Entry userdef. (start), Find Next Recipe Entry, Find Next Recipe Entry (start), New to next, Save As to next	No	Yes

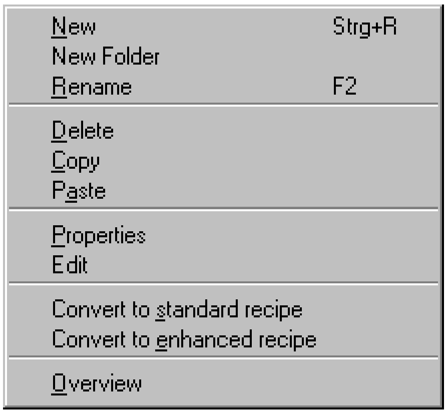
Possibility of using confirmation checks when running special functions: Clear Recipe Entry, Load Recipe Entry, Paste Recipe Entry, Restore Default Values, Save Recipe Entry, Save Recipe Entry As, Save As/Load Recipe Entry, Change Recipe Entry Name, Protect Recipe Entry, New to next, Save As to next	No	Yes
External recipe change controlled via PLC	Yes	Yes
(see in chapter "Initiating functions from the PLC", "Control Data Block" and "Status Data Block" in GRS.HLP)		
Automatic saving with recipe change (by operating on device or with external recipe change controlled by PLC)	Yes	No
The tag values are loaded from the recipe file even if a recipe entry without a name is loaded.	No *	Yes

* the current tag values are maintained

Note:
Enhanced mode supports all the functions of Standard mode except the automatic save with recipe changes.

See also Standard Mode, Enhanced Mode

6.12.5 Context Menu



New

Generates a new recipe.

New Folder

Create a new folder.

Rename

Modifies the name of the recipe.

Delete

Deletes the recipe.

Copy

Copies the recipe to the Clipboard.

Paste

Adds a recipe into the project from the Clipboard.

Properties

Opens the Property dialog of the recipe.

Edit

Edits the recipe with the editing program defined at Tools.

Convert to standard recipe

Converts an enhanced recipe to a standard recipe.

Convert to enhanced recipe

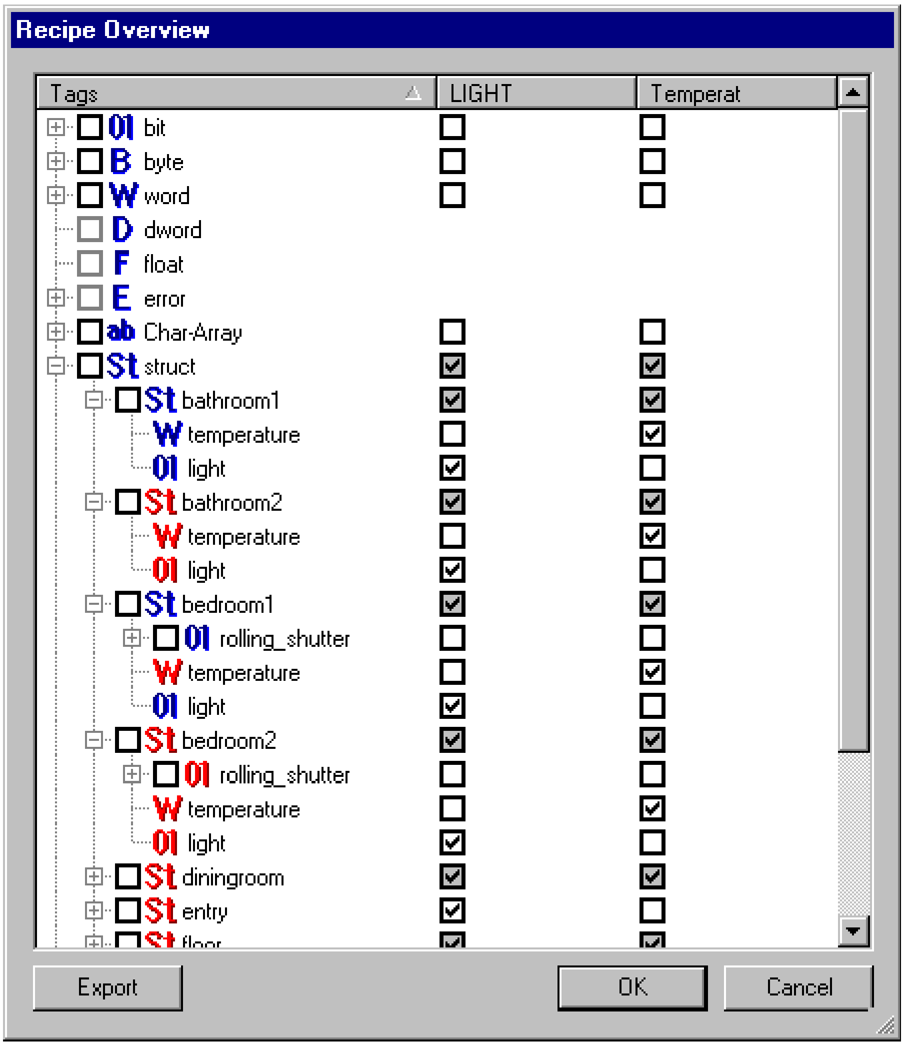
Converts a standard recipe to an enhanced recipe.

Overview

Zeigt eine Overview der Variablen, die in den Rezepten verwendeten werden. To obtain the overview of several recipes, the required recipes must be selected beforehand.

See also Standard Mode, Enhanced Mode, Overview

6.12.6 Overview



Tags	LIGHT	Temperat
□ 01 bit	□	□
□ B byte	□	□
□ W word	□	□
□ D dword		
□ F float		
□ E error		
□ ab Char-Array	□	□
□ St struct	☑	☑
□ St bathroom1	☑	☑
W temperature	□	☑
01 light	☑	□
□ St bathroom2	☑	☑
W temperature	□	☑
01 light	☑	□
□ St bedroom1	☑	☑
□ 01 rolling_shutter	□	□
W temperature	□	☑
01 light	☑	□
□ St bedroom2	☑	☑
□ 01 rolling_shutter	□	□
W temperature	□	☑
01 light	☑	□
□ St diningroom	☑	☑
□ St entry	☑	□
□ St floor	☑	☑

This dialog shows an overview of the tags that are used in the selected recipes. Other tags can be selected or deselected.

Export

Exports the represented data to a text file. Tabs are used as delimiters between the columns.

OK

All modifications made are accepted.

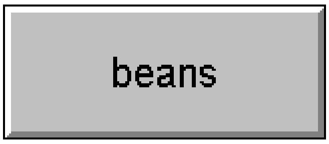
Cancel

All modifications made are discarded.

6.12.7 Standard Mode

Standard Mode

In Standard mode the recipe object is shown in the mask as a button.



If a recipe object is touched on the MMI, the Recipe Selection List will appear with all recipe entries available. The names and values of the individual recipe entries can be saved and edited on the MMI or on the PC.

Note:
When the recipe is changed, the data of the previously loaded recipe entry is saved unless it is write-protected.

See also **WP Button**, Write Protect (standard mode)

Changing Recipes (Standard Mode)

A change from one recipe entry to another causes the current value in the old recipe entry to be saved provided that the Write Protect (standard mode) is not activated. All the values of the new recipe entry are then loaded, displayed and sent to the PLC.

If an empty recipe entry is selected, the current values in the old recipe entry are saved provided that the Write Protect function is not activated. The current values will retain. The values will be saved by the next recipe change.

See also Differences between Standard and Enhanced Recipe management, Standard Mode

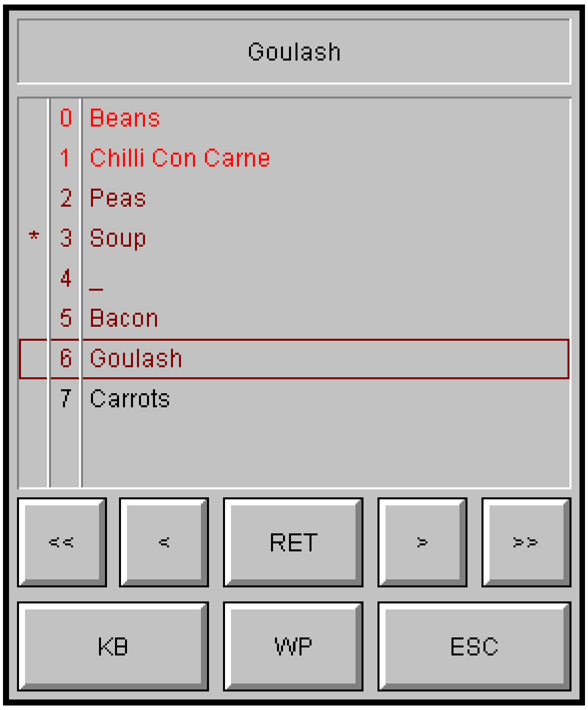
Write Protect (standard mode)

If the Write Protect of a recipe entry is activated, this means that:

- Names can not be changed
- Tag values are not overwritten when the recipe changes (Changing Recipes (Standard Mode))
- The tag values are not overwritten if the Save Recipe Entry special function is called

Recipe Selection List

Pressing the Recipe button on the MMI opens a selection list containing all available recipes. The following dialog is shown as an example of a selection list.



Goulash

	0	Beans
	1	Chilli Con Carne
	2	Peas
*	3	Soup
	4	_
	5	Bacon
	6	Goulash
	7	Carrots

The currently selected recipe entry is highlighted by a frame around it. The individual columns can be hidden if required, see also chapter Write Protect Column, Entry Number Column or Entry Name Column.

See also Differences between Standard and Enhanced Recipe management

The elements of this selection list are defined by the runtime program. The following describes the functions of these elements.

Title
Name of the currently selected recipe entry

List of all Recipe entries
The list contains all recipe entries for this object. The Recipe Selection List contains the following information:

Write Protect 1	Entry Number	Name of Entry
	0	Beans
	1	Chilli con carne
	2	Peas
*	3	Soup
	4	
	5	Bacon
	6	Goulash
	7	Carrots

1 A * in this column means that this recipe entry is write protected (see also Recipe Selection List, Recipe Selection List, Write Protect (standard mode), No. of Recipe Entries are write protectable by Users of Level 0, No. of Recipe Entries are write protectable by Users of all Levels).

Button <<
Moves the selection list one page up.

Button <

Moves the selection list one entry up.

Button >

Moves the selection list one entry down.

Button >>
Moves the selection list one page down.

Button KB
Pressing the KB button causes an alphanumeric keyboard to appear for entering or modifying a name of the selected recipe entry. See also Alpha numeric keyboard. The data of the recipe can be stored on a Flash card with the special function Backup Recipe.

Button WP
This button toggles the Write Protect status on and off for the selected recipe entry. If, for example, the Write Protect is currently inactive, it will be activated for the currently selected recipe entry, and vice versa.

Button RET
Quits this dialog box and returns to the selected recipe entry. If a recipe entry is not write protected, the current tag values in the old recipe entry are saved before moving to the new recipe entry. If the same recipe entry is selected a second time, the recipe entry will be loaded without saving the current tag values to the file. If a recipe entry without a name is selected, the current values of the tags are maintained and the values from the recipe file are **not read**.

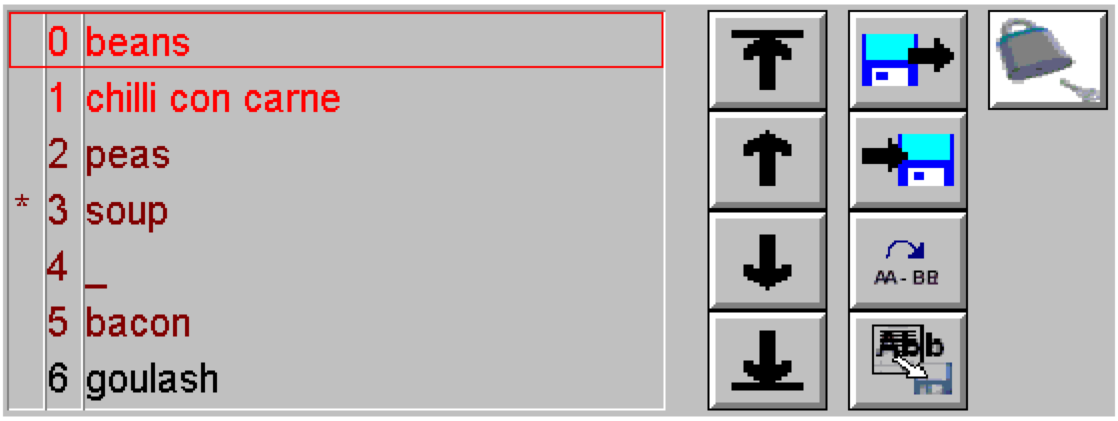
Button ESC
Quits this dialog without a recipe change, i.e. the currently activated recipe entry will be retained. Changes to the recipe entry name and write protection are not undone.

6.12.8 Enhanced Mode

Enhanced Mode

The following figure shows the section of a sample mask. The recipe object shows the selection list of all recipe entries. All functions (e.g. Load Recipe Entry, Line Up, Line Down, Save Recipe Entry, etc.) used in conjunction with the recipe can be drawn into the mask as individual Function Key objects.

See also Recipe Functions



The individual columns of the selection list can be hidden if required, see also chapter Write Protect Column, Entry Number Column or Entry Name Column.

Special functions First Line, Last Line, Line Down, Line Up, Page Down and Page Up enable the selected recipe entry to be changed. In order, for example, to load the tag values of a particular recipe entry, these special functions must be used to select the required entry and load the values via special function Load Recipe Entry. This causes all tags that are assigned to the recipe object to be overwritten with the values from the recipe data base.

For a further description of the selection list see also "List of all recipe entries" in chapter Recipe Selection List.

See also Differences between Standard and Enhanced Recipe management

Changing Recipes (Enhanced Mode)

All the values of the new recipe entry are loaded, displayed and sent to the PLC.

See also Differences between Standard and Enhanced Recipe management, Enhanced Mode

Write Protect (enhanced mode)

If the write protection of a recipe entry is activated, this means that:

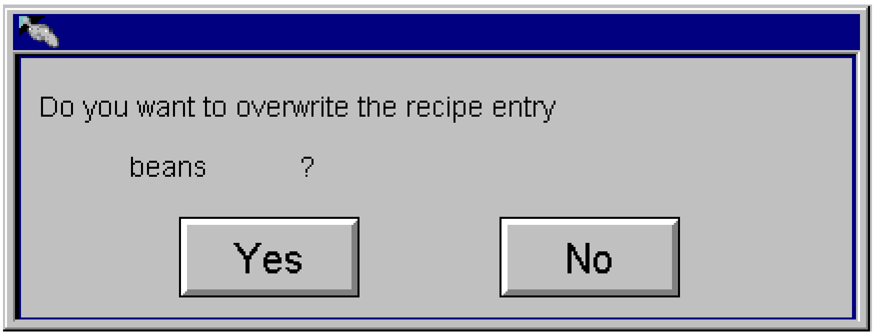
- Name changes are not possible
- The recipe entry names and the tag values are not overwritten when the following special functions are run: Clear Recipe Entry, Paste Recipe Entry, Restore Default Values, Save Recipe Entry, Save Recipe Entry As, Save As/Load Recipe Entry

Confirmation Check

Enhanced mode recipe management also allows confirmation checks to be implemented. For example, when the special function Save Recipe Entry is activated, a "keyboard" mask can be called up (see Edit). If the special function is used without a confirmation check, it would be carried out immediately.

The settings for the confirmation checks are described in chapter Confirmation on use of special function....

These keyboard masks can be designed as required, apart from the fact that only certain object types are permitted (see Edit). For example, the following could be displayed in a mask:



Do you want to overwrite the recipe entry

beans ?

Clicking **Yes** causes the special function to be executed, and **No** causes the special function not to be executed.

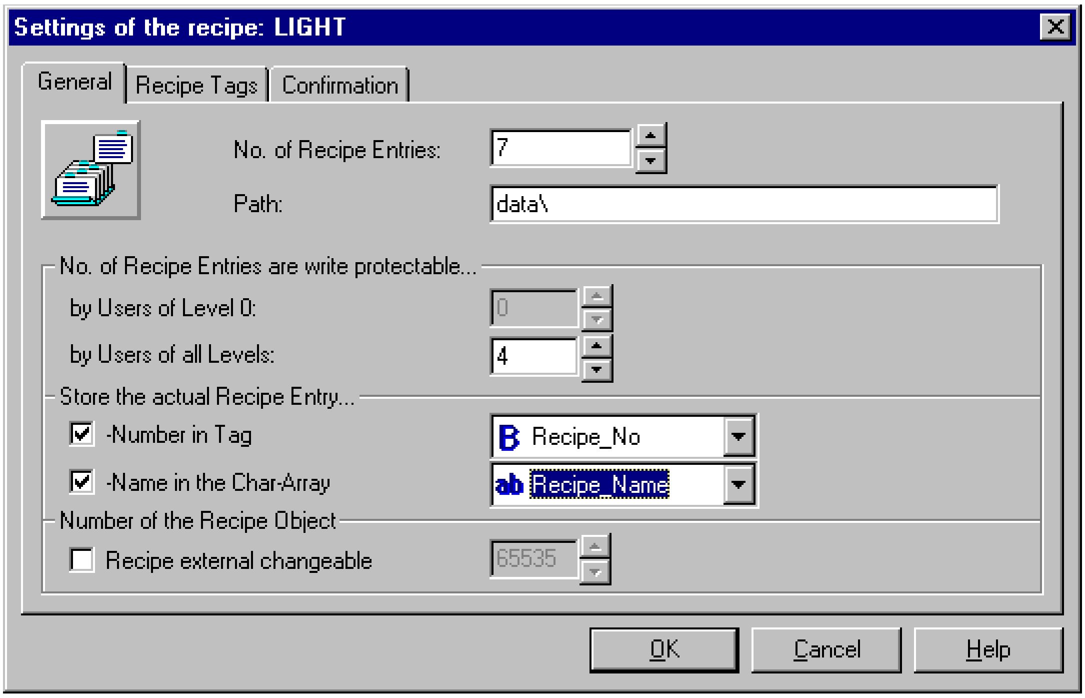
This mask contains the following objects:

- Text display with the objects: Text
- Function Key (Display: Loaded Entry) for displaying the currently loaded recipe entry (in the above example: "beans")
- Function Keys (Keyboard Mask OK, Keyboard Mask CANCEL) for both keys "Yes" and "No"

See also Clear Recipe Entry, Load Recipe Entry, Paste Recipe Entry, Restore Default Values, Save Recipe Entry, Save Recipe Entry As, Save As/Load Recipe Entry

6.12.9 General

General



Settings of the recipe: LIGHT

No. of Recipe Entries: 7

Path: data\

No. of Recipe Entries are write protectable...

by Users of Level 0: 0

by Users of all Levels: 4

Store the actual Recipe Entry...

☑ -Number in Tag: Recipe_No

☑ -Name in the Char-Array: Recipe_Name

Number of the Recipe Object

□ Recipe external changeable: 65535

No. of Recipe Entries

This setting determines the number of recipe entries in the recipe object (number of entries in the Recipe Selection List).

Path

With CE panels a directory can be defined where the recipe is to be saved. The default directory set is 'data\'.

Note:
The users must ensure that the defined directory also exists and the recipe files are also copied there before the device is started up.

No. of Recipe Entries are write protectable by Users of Level 0

Write protection can be activated by all users irrespective of level.
The Write protection can only be removed (**deactivated**) by users with the appropriate access rights.

Specifies the number of recipe entries starting from recipe entry 0 for which write protection can be **deactivated** by level 0 users (see also Recipe Selection List, Protect Recipe Entry).

If this field is set to 0, recipe entries cannot be write protected in conjunction with password level 0.

These recipe entries can be shown in any color, as required.

See also No. of Recipe Entries, No. of Recipe Entries are write protectable by Users of all Levels, Write Protect (standard mode), Write Protect (enhanced mode)

See also No. of Recipe Entries are write protectable by Users of all Levels

No. of Recipe Entries are write protectable by Users of all Levels

The number entered is the specified number of recipe entries for which write protection can be activated or deactivated by all users (see also Recipe Selection List, Protect Recipe Entry). The number of recipe entries are added to the entry in the No. of Recipe Entries are write protectable by Users of Level 0 field.

Example:

Number of recipe entries	7
No. of Recipe Entries are write protectable by Users of Level 0	2
No. of Recipe Entries are write protectable by Users of all Levels	4

This means that recipe entries 0 and 1 can only be deactivated by level 0 users. Write protect for recipe entries 2...5 can be activated and deactivated by all levels. Recipe entry 6 cannot be write protected.

If this field is set to 0, users of levels > 0 cannot deactivate write protection.

These recipe entries can be shown in any color, as required.

See also No. of Recipe Entries, No. of Recipe Entries are write protectable by Users of Level 0, Write Protect (standard mode), Write Protect (enhanced mode)

Store the actual Recipe Entry Number in Tag

Use this option to store the currently selected recipe entry in the value tag specified.

See also Defining Tags

Store the actual Recipe Entry-Name in Block

Use this option to store the currently selected recipe entry in the specified data block of type Char-Array.

See also Defining Tags

Recipe external changeable

A number for this recipe object must be specified in order to use this option.

The number can accept values between 0 and 15.

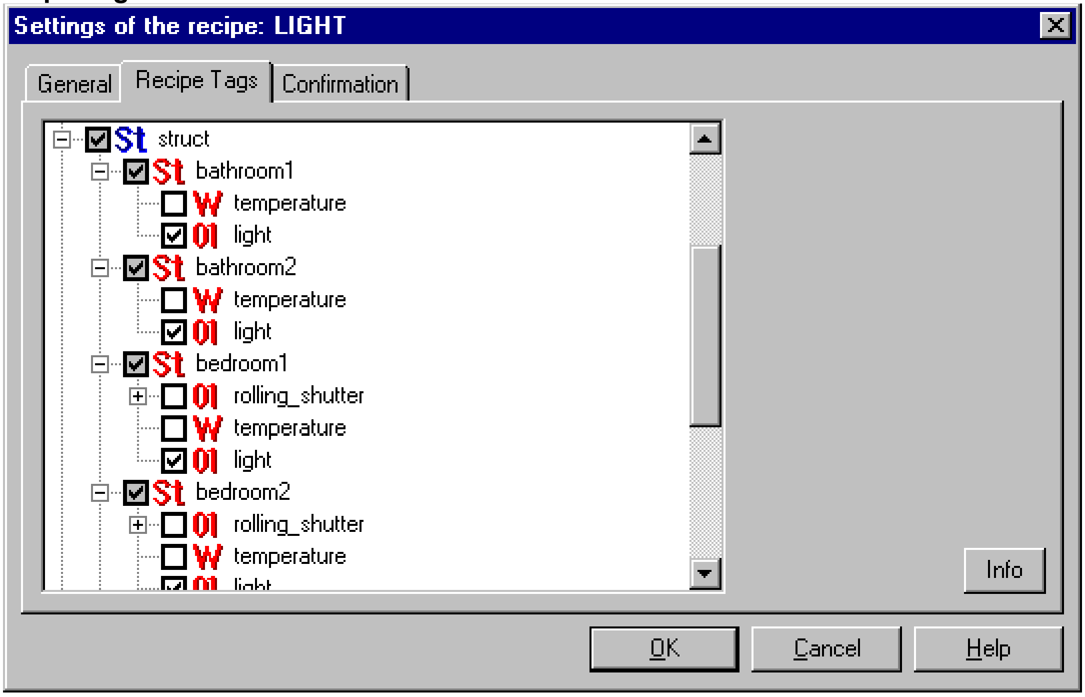
The recipe change can be initiated from the PLC via the control data block. This recipe object number is written to the 6th word of the control data block together with the number of the recipe entry concerned. The recipe change is initiated via the MMI by setting the 8th bit (recipe change) of the 3th word in the control data block. After the MMI has executed the recipe change, the bit 7 of the 3th word in the status data block is reset.

A more detailed description of the control data block and status data block is given in GRS.HLP.

See also Initiating functions from the PLC

6.12.10 Recipe Tags

Recipe Tags



Settings of the recipe: LIGHT

- ☑ St struct
  - ☑ St bathroom1
    - □ W temperature
    - ☑ 01 light
  - ☑ St bathroom2
    - □ W temperature
    - ☑ 01 light
  - ☑ St bedroom1
    - □ 01 rolling_shutter
    - □ W temperature
    - ☑ 01 light
  - ☑ St bedroom2
    - □ 01 rolling_shutter
    - □ W temperature
    - ☑ 01 light

This panel shows the required tags assigned to the recipe object. The Recipe file (*.TAB) saves the values for all assigned tags of each recipe entry. The recipe file contains a column for each tag.

Up to 2000 tags can be assigned to each recipe.

The list contains all value and bit tags (see Definition of Tags).

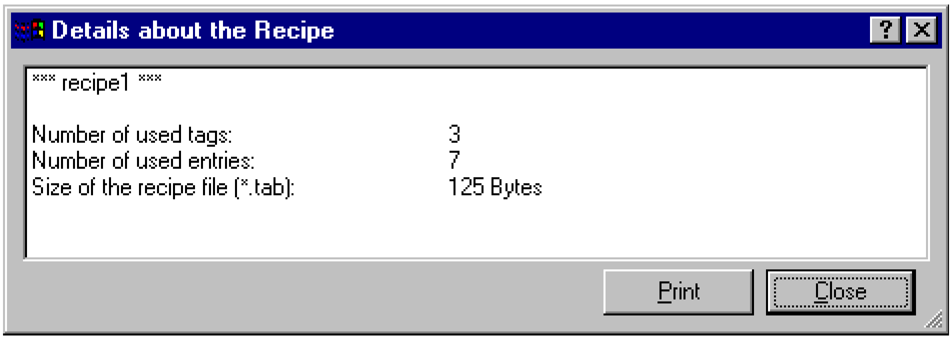
The structure of a recipe file is described in Recipe file (*.TAB). The file is saved on the Flash card, in the flash memory or on the hard disk.

Info

See also Info

Info

Clicking this button calls up the following dialog showing information on the recipe object.



*** recipe1 ***

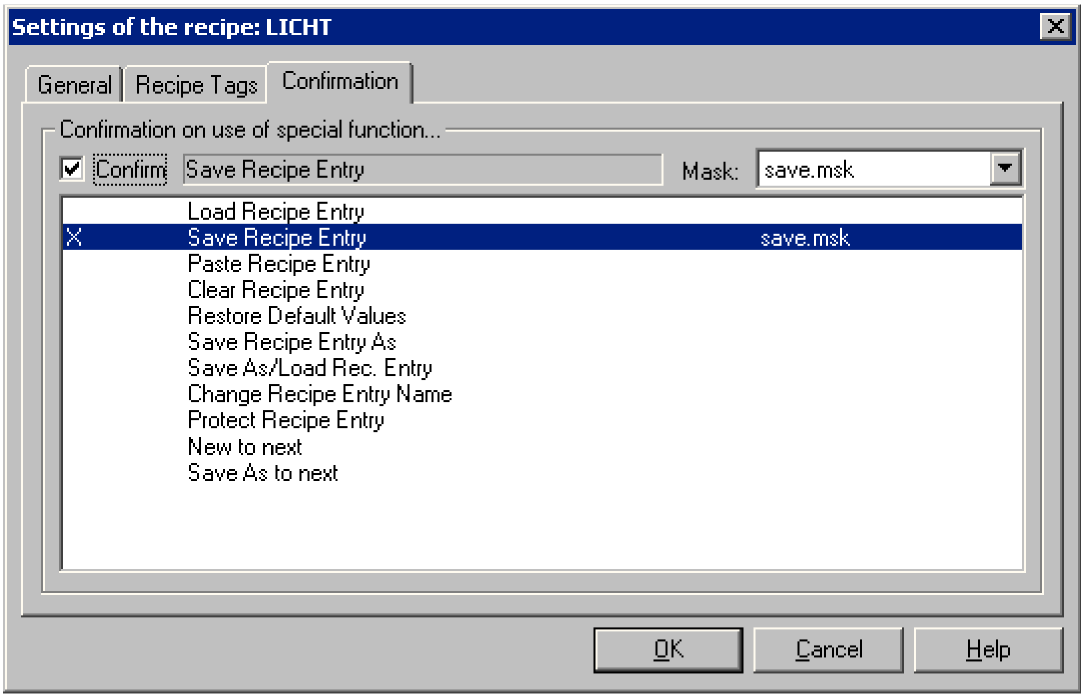
Number of used tags:	3
Number of used entries:	7
Size of the recipe file (*.tab):	125 Bytes

The list contains the following information:

- Name of the recipe object
- Number of assigned tags
- Number of recipe entries
- Size of the recipe file (*.tab) in number of bytes

6.12.11 Confirmations

Confirmations



Confirmation on use of special function...

☑ Confirm Save Recipe Entry Mask: save.msk

	Load Recipe Entry	
X	Save Recipe Entry	save.msk
	Paste Recipe Entry	
	Clear Recipe Entry	
	Restore Default Values	
	Save Recipe Entry As	
	Save As/Load Rec. Entry	
	Change Recipe Entry Name	
	Protect Recipe Entry	
	New to next	
	Save As to next	

Confirmation on use of special function...

These settings are only possible if Enhanced Mode has been set.

This list contains all special functions that can be provided with a confirmation check.

If a special function is selected from the list, the required settings can be made:

- **Confirm**: Confirmation check used yes / no
- Mask: This specifies the mask that is displayed when the special function is called up

Note:
The **Mask** field contains all "Keyboard" type masks (see Edit).

A more detailed description of confirmation checks and an example of this kind of mask is given in chapter Confirmation Check.

Load Recipe Entry (modified)

This prompt is shown when unsaved data would be destroyed by the loading of another recipe entry.

See also Clear Recipe Entry, Load Recipe Entry, Paste Recipe Entry, Restore Default Values, Save Recipe Entry, Save Recipe Entry As, Save As/Load Recipe Entry, Change Recipe Entry Name, Protect Recipe Entry, New to next, Save As to next

6.13 Optimize Projects

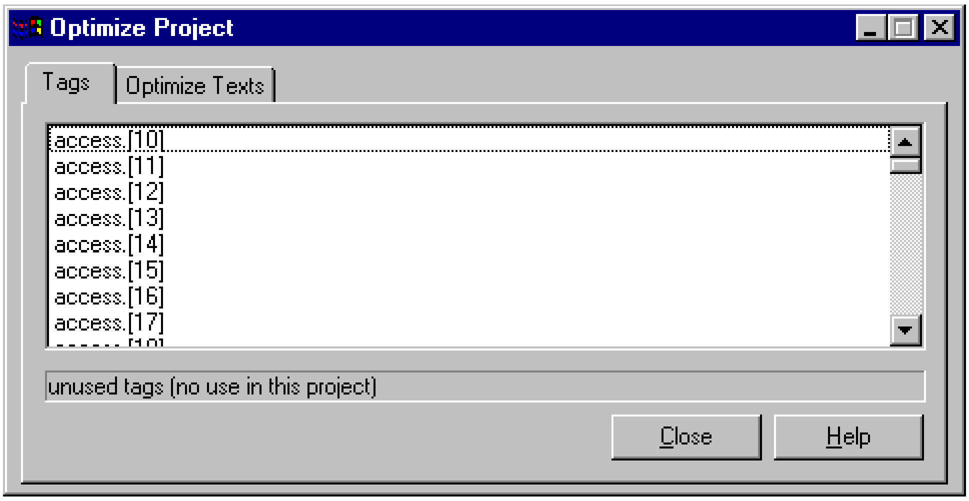
6.13.1 Optimize Projects

This optimization procedure edits and updates internal data structures or files.

Optimize Tags

Optimize Texts

6.13.2 Optimize Tags



access.[10]
access.[11]
access.[12]
access.[13]
access.[14]
access.[15]
access.[16]
access.[17]

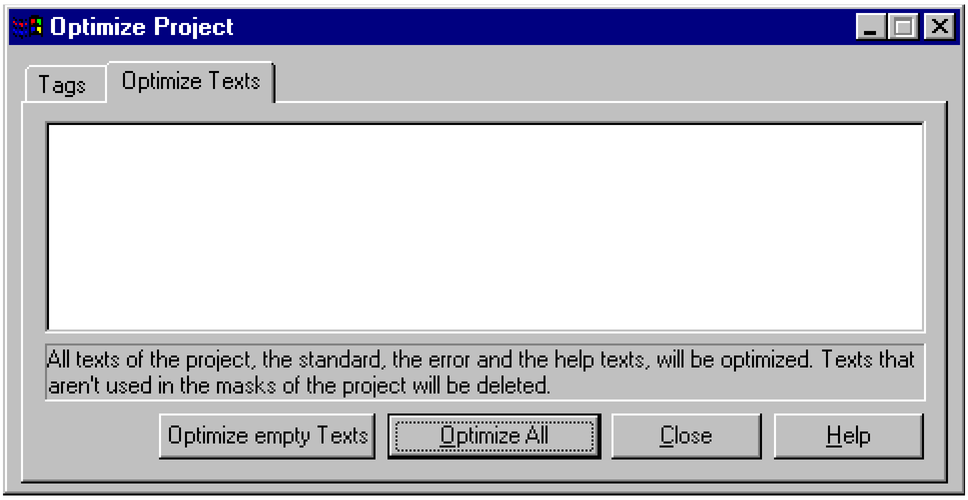
unused tags (no use in this project)

Shows all tags that are not used in the project.

See also Optimize Texts

6.13.3 Optimize Texts

This dialog is used to optimize the texts by optimizing the data structures of the texts (standard, error, help texts). The dialog lists the masks that were included in the optimization. This can be useful if a mask was removed from a project (Project Masks) or if texts are no longer used or if the project contains many empty strings.



All texts of the project, the standard, the error and the help texts, will be optimized. Texts that aren't used in the masks of the project will be deleted.

Optimize All

All the texts (standard, error or help texts) that are not used by the current project are deleted.

Optimize empty Texts

All the empty texts (standard, error or help texts) that are not used by the current project are deleted.

An optimization should also be carried out if a mask is added to or removed from the project in the Mask -> Project Masks dialog so that the data structures of the tags can be adapted.

The optimization is made in all masks belonging to the current project.

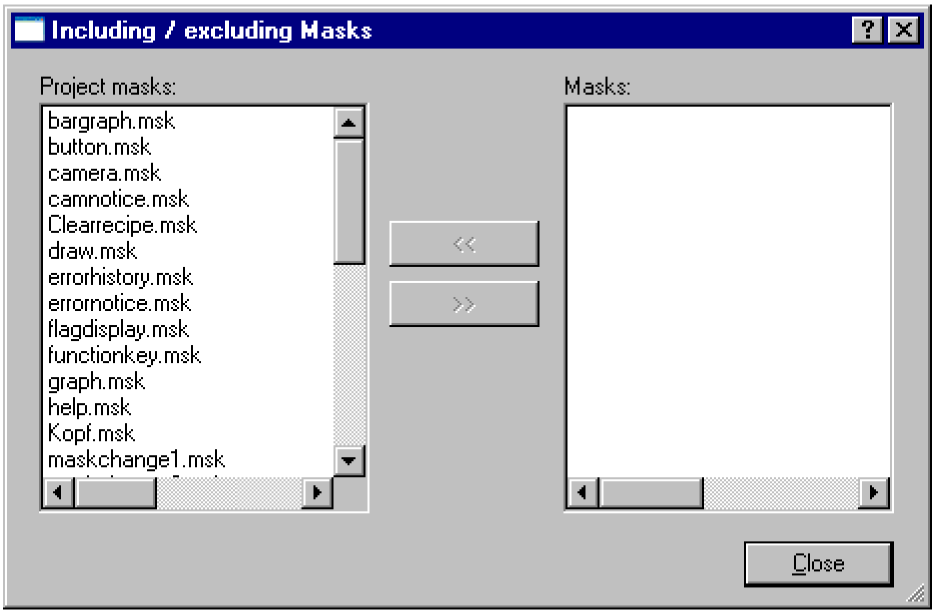
See also Optimize Tags

6.14 Project Masks

6.14.1 Project Masks

The different masks belonging to a project must be configured once the project has been generated. For this, existing masks from other projects can be added to the project or a new mask (Mask -> New).

Each mask is saved in a separate file (one file per mask).



Project Masks

List of all masks that belong to the current project.

All masks are saved in the project directory under the same name as displayed in the list.

Masks

List of all masks (files) in the project directory that do not belong to the project.

Button <<

Click this button to import a mask selected in the Masks list into the current project and to add it to the Project Masks list.

IMPORTANT:
Texts and tags are not imported. The mask will therefore not be shown correctly if a text number or tag name does not exist in the current project.

Button >>

Click this button to remove the mask selected in the Project Masks list from the current project and to add it to the Masks list.

Note:
A mask is not deleted when it is removed from the project!

6.15 Mask Settings

6.15.1 Mask Settings

Screen Saver/Touch Disable

Color, Type, Resolution

6.15.2 Mask Number

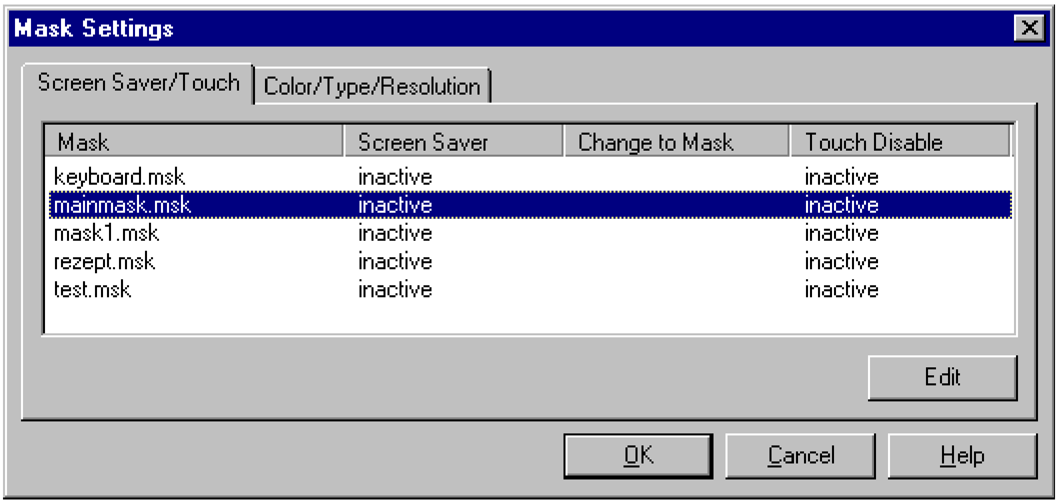
Each mask name is automatically assigned a mask number (ID) when it inserted in a project. A project cannot contain more than one mask with the same number.

This number is used for initiating a mask change from the PLC or for informing the PLC of the currently active mask in the MMI.

See also Project Settings: Mask Numbers

6.15.3 Screen Saver/Touch Disable

Screen Saver/Touch Disable



Mask	Screen Saver	Change to Mask	Touch Disable
keyboard.msk	inactive		inactive
mainmask.msk	inactive		inactive
mask1.msk	inactive		inactive
rezept.msk	inactive		inactive
test.msk	inactive		inactive

The list contains all masks assigned to the project with their current settings in the following columns:

Mask: File Name of the Mask

Screen Saver: Indicates the time after which the screen saver is activated or "inactive" when not using a screen saver.

Change to Mask: Indicates the mask that is selected when the screen saver is activated.

Touch Disable: Indicates the minutes after the touch screen is deactivated or indicates "inactive" if the touch screen is to be continually activated.

Settings can be modified using the Edit button.

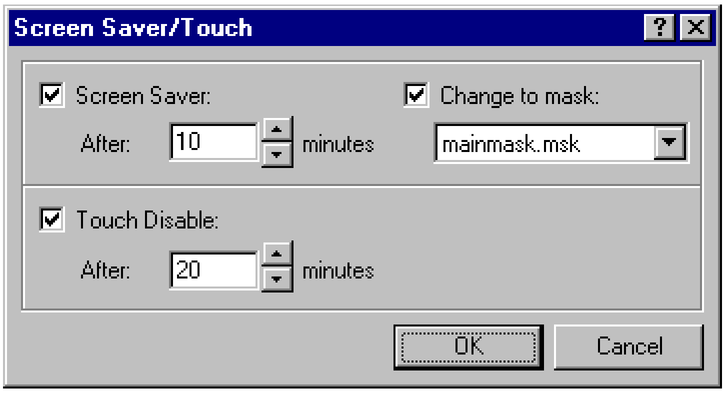
Note:
Multiple selections are possible.

OK

Click OK to save the settings in the appropriate mask files.

Edit

Clicking this button will open the following dialog:



☑ Screen Saver:
After: 10 minutes

☑ Change to mask:
mainmask.msk

☑ Touch Disable:
After: 20 minutes

The fields of this dialog contain the current settings of the mask(s). The fields are dimmed gray if the settings of the selected masks cannot be clearly shown (such as the Change to mask fields in the figure above).

Screen Saver

Activating this check box enables the period of no touch operations to be set in minutes after which the screen saver is switched on.

LCD displays

The screen saver reduces the current of the backlight, thus significantly increasing its lifespan and always changes to the mask specified (see Change to Mask). The use of this screen saver is recommended for all masks since a reduction in brightness is hardly noticed.

EL displays

The screen saver always switches to the specified mask (see **Change to Mask**).

The brightness (current) of the backlight can also be permanently reduced. For this use the Overview for reducing the brightness (Brightness 40%, 60%, 80%, 100%, 0%, Backlight Off).

Change to Mask

When the screen saver is activated it is also possible to switch to a specified mask.

Touch Disable

Activating this check box enables the period of no touch operations to be set in minutes after which the normal touch reaction is switched off.

Whilst the touch is disabled a small image will continue to appear and disappear at random points on the screen.

The touch function is reactivated by touching the screen twice at two points located diagonally to each other at the same time.

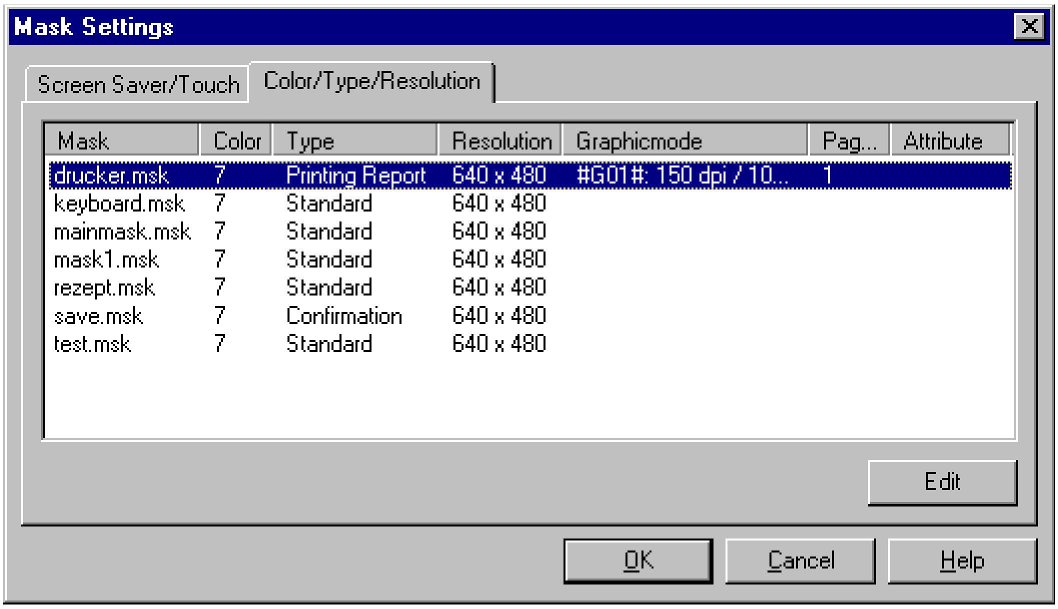
OK

Clicking OK causes the modifications made to be transferred to the Screen Saver/Touch Disable list. The mask files themselves are not yet changed.

6.15.4 Color, Type, Resolution

Color, Type, Resolution

This dialog box is used to define the basic color (background), the type and the resolution of a mask.



Mask	Color	Type	Resolution	Graphicmode	Pag...	Attribute
drucker.msk	7	Printing Report	640 x 480	#G01#: 150 dpi / 10...	1	
keyboard.msk	7	Standard	640 x 480			
mainmask.msk	7	Standard	640 x 480			
mask1.msk	7	Standard	640 x 480			
rezept.msk	7	Standard	640 x 480			
save.msk	7	Confirmation	640 x 480			
test.msk	7	Standard	640 x 480			

The list contains all masks assigned to the project with their current settings in the following columns:

Mask: File name of the mask

Color: Mask background color and transparent mask

Type: Mask type: Standard, keyboard or Printing Report

Resolution: Mask Resolution

Graphic Mode: Graphic mode for printing out printer reports (only for mask type: Printing Report)

Pages: Number of pages (only for mask type: Printing Report)

Attribute: Attribute for printing out printer reports (only for mask type: Printing Report)

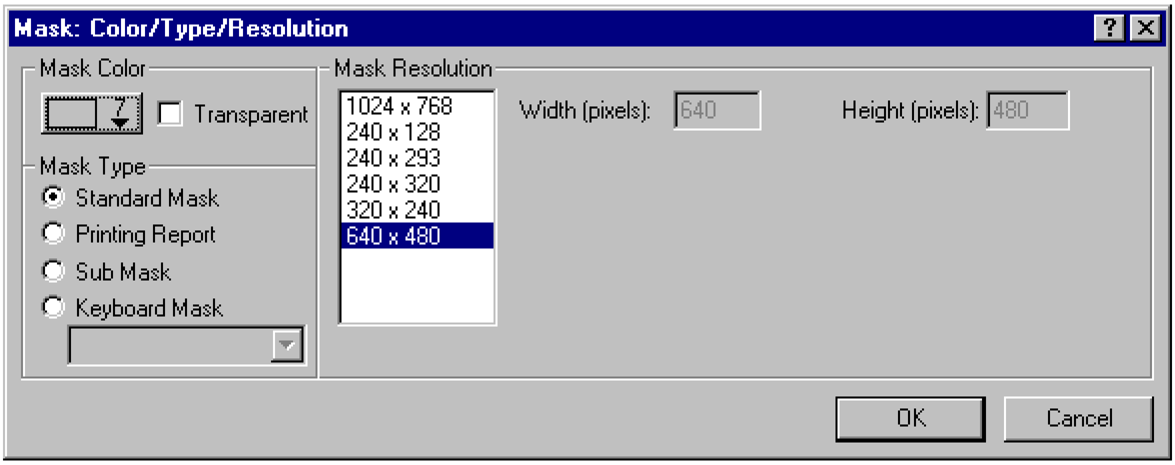
Settings can be modified using the Edit button.

OK

Click OK to save the settings in the appropriate mask files.

Edit

Clicking this button will open the following dialog for "**Standard**" and "**Keyboard**" mask types. The dialog for printing report masks is described in section Printing Report .



The fields contain the current settings of the mask.

Mask color

Use this list box to set the basic color (background) of the mask.

When the mask is changed it will be cleared with this color.

Transparent

Activating this check box provides a mask with a transparent background so that a color setting cannot be made for it.

On the MMI a mask change to a mask with a transparent background gives the appearance of overlaying the new mask on the previous one.

Note:
Although the zones of the previous mask are still visible, they are no longer functional.

Mask resolution

The required mask resolution can be selected from the list. All resolutions of the different device types are made available for selection.

Use this to set the mask pixel resolution.

Mask type

There are three types of masks in Galileo.

Type:	**Description**
Standard Mask	These masks are used to display PLC data. They can also contain all types of static and dynamic objects.
Keyboard Mask	These masks are used to create user-defined keyboards. These masks can only contain static objects and function key objects with particular properties. See also Overview, Function Key, Recipe
Printing Report	These masks can only be used for printouts. They cannot contain Recipe, Error Window and Help Button object types. The contents of the object Graph are only printed out if plotting was stopped during printing. The width and height of the masks can be adjusted as required. The printout is carried out in Graphic mode in the background so that the mask is not visible on the MMI.

See also Printing Report, Print options (Overview), Print Report, Start/Stop Graph 0..99

Sub Mask These masks are suitable for combining objects that are used at several locations in the project: for example, header lines, footer lines or recurring object groups. The size of the mask can be defined as required. However, it must not exceed the device resolution. A "Sub Mask" object must be inserted in order to use a sub mask in another mask.

These can contain all types of static and dynamic objects.

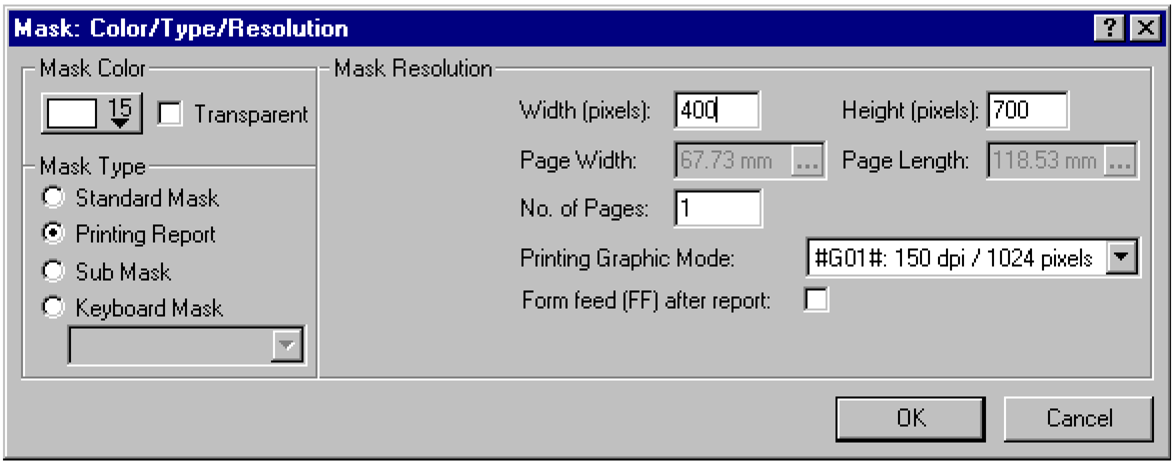
Selecting the "**Printing Report**" as a mask type will automatically cause additional entry fields to be displayed in the dialog.

OK

Clicking OK causes the modifications made to be transferred to the Color, Type, Resolution list. The mask files themselves are not yet changed.

Printing Report

The following dialog will appear for "**Printing Report**" mask types:



Mask: Color/Type/Resolution

Mask Color: 15 □ Transparent

Mask Type:
○ Standard Mask
● Printing Report
○ Sub Mask
○ Keyboard Mask

Mask Resolution:
Width (pixels): 400
Height (pixels): 700
Page Width: 67.73 mm
Page Length: 118.53 mm
No. of Pages: 1
Printing Graphic Mode: #G01#: 150 dpi / 1024 pixels
Form feed (FF) after report: □

The fields contain the current settings of the printing report.

Width (pixels)

Specified width of the printer report in number of pixels

Height (pixels)

Specified height of the printer report in number of pixels

Page width

Display of the page width of the printer report. This field is adjusted when the **Width (pixels)**, **Printing graphic mode** and **No. of pages** fields change.

Page length

Display of the page length of the printer report. This field is adjusted when the **Height (pixels)**, **Printing graphic mode** and **No. of pages** fields change.

No. of pages

Specified number of pages of the printer report.

Printing graphic mode

Only applies to ESC-compatible printers.

Selection of the required Graphic mode from the printer driver. Graphic mode consists of the resolution in dots per inch (DPI) and the maximum print width in pixels. This number of pixels must be at least as large as specified under **Width (pixels)**.

See also Printer Driver (*.prv)

Form feed (FF) after report

Only relevant for ESC compatible printers.

Checking this option causes a form feed (FF) command to be sent to the printer when the printer report has been printed out.

6.16 Creating Masks

6.16.1 Creating Masks

See description in Mask Settings, Static Objects, Dynamic Objects

Clipboard

The clipboard can be used for the simple and efficient copying of object within GALILEO.

Note:
External objects (e.g. bitmaps from MS Paint) cannot be inserted directly in the project via the clipboard. Bitmaps must be available as files in order for them to be inserted in the project.

No Help Lines

The mask can be shown with or without Help lines. Help lines are all those lines that do not appear on the panel as grid lines, such as dotted lines which are used as frames for transparent touch zones etc..

7 Definition of Tags

7.1 Definition of Tags

Galileo supports the following types of tags:

- **Bit**
- **Value (Byte, Word, DWord, Float)**
- **Error**
- **Char-Array**
- **Structs**
- **System Structs**

Each object in a Mask that processes data, either for displaying or for entering data, uses a Tag. A tag can be addressed and represents the value or the bit in the PLC. Individual tags, tag arrays or structures can be addressed. Depending on the PLC used, the addressed tags, arrays and structures must be set to the required data size. If a tag is not addressed, it is only processed internally in the MMI and is not processed by the PLC (see also Address). As soon as the tag is assigned an Address, it is a PLC tag that can either be read from the PLC, sent to it or both depending on the Data Direction set.

Note:

Manual value inputs are carried out on the MMI normally in decimal format, apart from when User Defined Keyboards are used.

The tag list is part of the Toolbar "Project Overview". This tag toolbar is used to define tags, change tag settings etc..

Bit

The Data Direction can be specified for bit tags.

Byte

The Data Direction can be specified for byte tags. With byte tags it is also possible to define the Display Format (decimal, hexadecimal, binary, octal or BCD).

Word

The Data Direction can be specified for word tags. With word tags it is also possible to define the Display Format (decimal, hexadecimal, binary, octal or BCD).

Double Word

The Data Direction can be specified for dword tags. With dword tags it is also possible to define the Display Format (decimal, hexadecimal, binary, octal or BCD).

Float

The Data Direction can be specified for float tags. The Display Format is permanently defined as decimal format.

Note:
The float tags are saved in **IEEE format**. In other words, they consist of a sign, an exponent and the mantissa. As the mantissa is limited to 23 bits, the entire value range cannot be represented exactly. The project designer must therefore always bear in mind that inaccuracies occur with float tags! No exponent representation is used on the panel for entries and outputs.

Error

Error tags are read exclusively from the PLC and therefore have the data direction 'Read (MMI <- PLC)'. Error tags are only read from the PLC using the Control Data Block (refer to the GRS.HLP documentation for further information).

Char-Array

The Char array tags basically consist of texts or strings. They can be used to transfer texts to the PLC as strings (each character consists of 1 byte). They are also used to display the current user name or the current recipe entry (see Password Settings and Recipe). The Char array tags can be displayed using PLC Text objects.

Structs

Structures are used for grouping tags. Different types of tags can be combined within structures. There are two types of addressing possible: 'Addressing structures' or 'Addressing each single tag within the structure'.

Addressing the structure

If the structure is addressed, all the tags within the structure are addressed automatically. The individual addresses are calculated according to the memory alignment.

Addressing each individual tag within the structure

If the tags within a structure are addressed individually, the structure has no function in conjunction with the communication. The structure is simply used as a design aid in order to improve the clarity of the project.

System Structs

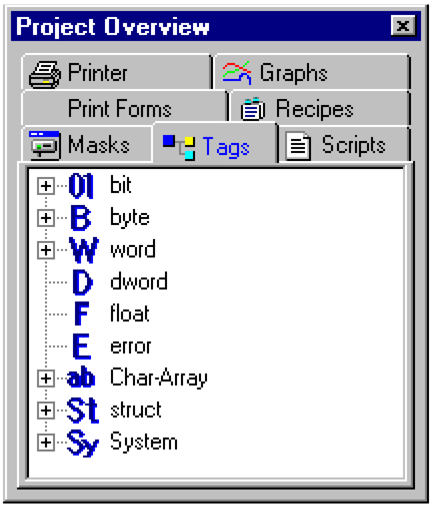
Note:
The system automatically creates the following system structures: **Control**, **Status** and **Date_Time**. The '**PLC to PLC**' structure is also available if at least 2 PLC connections are used which support a structure size of at least 16 bytes (see Selecting the PLC). Although it is still available to increase compatibility, **it should no longer be used for new applications.**
Refer to the exact description of these system structures in chapters '**Control**', '**Status**', '**Time/Date**' and '**PLC to PLC**' of the GRS.HLP documentation.

If these system structures are not addressed, they are also not used by the MMI.

7.2 Tag Toolbar

7.2.1 Tag Toolbar

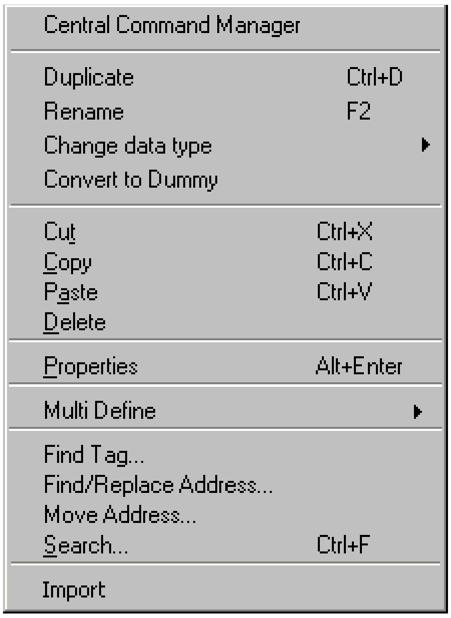
The Toolbar "Project Overview" shows all the tags available in the form of a tree structure.



Note:
The order of sorting is the standard Windows sort order. Consequently, the tag "bit2" will be listed after "bit15". If, however, "bit002" and "bit015" are selected, "bit002" will be listed before "bit015".

Variable Popup Menu

Right-clicking the mouse in the tag overview will open the following context menu:



The menu items available depend on the tag/array/structure selected in the tree structure.

Central Command Manager

Only relevant for EIB. See Central Command Manager

New
This menu item is used to add a new tag to the project. The tag name can be defined as required and must not be longer than 64 characters. Upper and lower case characters from 'a' to 'z' and the underline '_' are permissible.

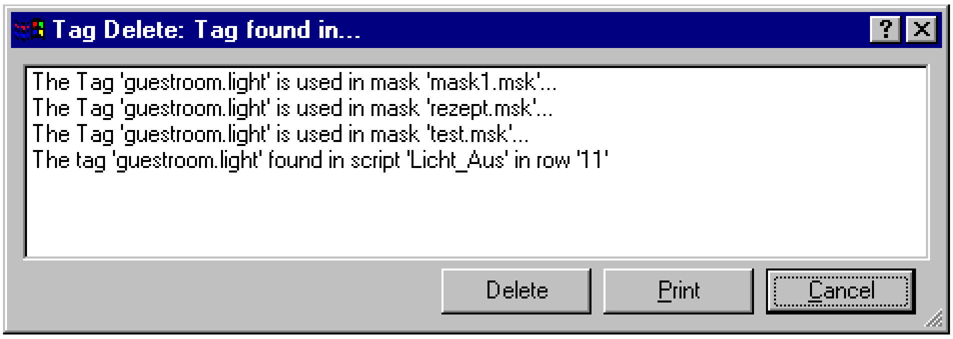
Duplicate
This is used to duplicate the selected tag, i.e. a new tag is created in which all the settings are copied. The new tag name is formed from the previous name, and a number is attached to the tag name that is incremented by 1 with each duplication (e.g. tag1 becomes tag2, tag3 becomes tag4, and test becomes test1).

Rename
The user is requested to enter a new name. The name change is carried out in the entire project. The same tag name can only be assigned once, and the elements of different structures can have the same name.

Change Data Type
This menu item is used to change a byte tag into a word tag, without other changes having to be carried out in the project. This menu point is only visible and active if the type can also be changed.

Convert to Dummy
Array elements and tags in structures can be converted to dummy tags. The use of dummy tags is explained in chapter Address.

Cut, Delete, Copy, Paste
The selected tag (array or structure) can be copied, cut or pasted via the Clipboard. The following dialog appears with deletions and cut operations if the project uses this tag.



```
The Tag 'guestroom.light' is used in mask 'mask1.msk'...
The Tag 'guestroom.light' is used in mask 'rezept.msk'...
The Tag 'guestroom.light' is used in mask 'test.msk'...
The tag 'guestroom.light' found in script 'Licht_Aus' in row '11'
```

Delete operations remove the tag from the project and the above listed allocations are deleted.

Note:
The tag is deleted from the entire project, i.e. currently unopened mask files are adjusted if necessary. **This delete operation can no longer be undone.**

Properties
This menu item calls the properties dialog for the selected tag. Several pages are provided for changing the settings of tags. The individual pages are described in the following chapter: Format, Error Display, Address , Limits, Units_and_Conversion_Factors, Texts, Parameter List.

Sequence of Texts…

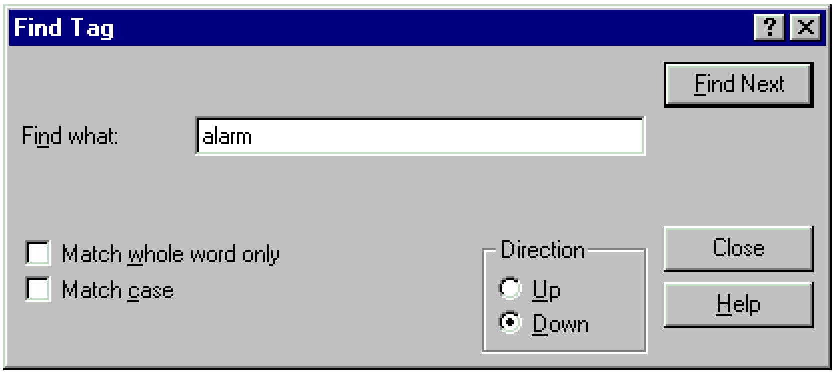
This function can be used to assign the description text, help text and error text of several tags with a consecutive text index number.

The function can be used on arrays, structures, and ranges of arrays and structures.

See also Define Text Sequence

Find Tag

Use this function to search for tag names in the project. Use Next to move to the next tag with the name specified.



Find Tag

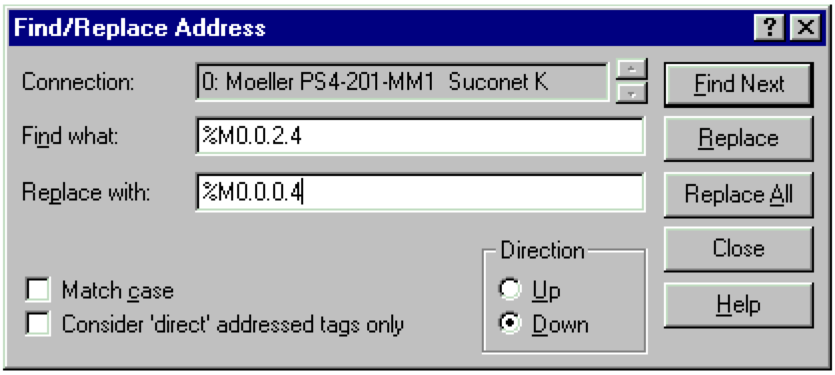
Find what: alarm

☐ Match whole word only
☐ Match case

Direction: ○ Up ● Down

Find/Replace Address

This function is used for finding and replacing the PLC addresses of the tags. The Replace function replaces the text inside the PLC address and then finds the next address containing the address. If the text is found once more, this tag is selected (see also Address).
If the Only consider directly addressed tags option is selected, only directly addressed tags are searched for. This means that tags that are elements of addressed arrays and structures are searched. If the option is not selected, all addressed tags are searched.



Find/Replace Address

Connection: 0: Moeller PS4-201-MM1 Suconet K

Find what: %M0.0.2.4

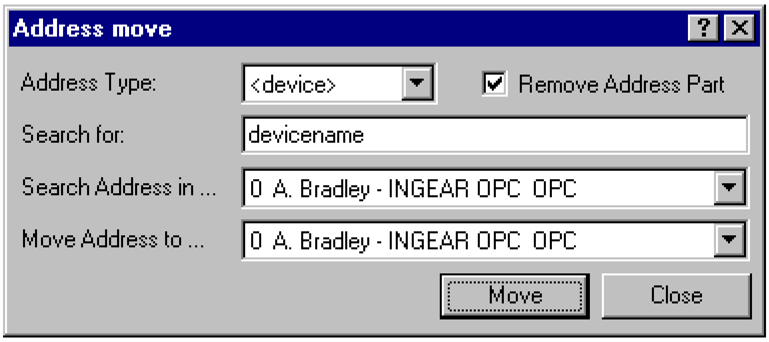
Replace with: %M0.0.0.4

☐ Match case
☐ Consider 'direct' addressed tags only

Direction: ○ Up ● Down

Move Address

A project change may, for example, involve the replacement of a PLC with a different PLC. If the PLCs have similar address types, then the addresses can be moved automatically and partially adapted. The search is carried out in all tags, however, only those addresses are moved in which the search expression corresponds to the address type.



Address move

Address Type: <device>

☑ Remove Address Part

Search for: devicename

Search Address in ... 0 A. Bradley - INGEAR OPC OPC

Move Address to ... 0 A. Bradley - INGEAR OPC OPC

Address Type

Defines the address type in which the expression is to be searched.

Remove Address Part

When the address is moved, the selected address type is moved from the address.

Search for

The address is moved if the text defined here fully corresponds to the address type of the address. The search entry is not case-sensitive.

Search Address in

The expression is searched for in the addresses defined for this communication.

Move Address to

All addresses found are moved to this communication.

Search

Use this function to call the 'Search' dialog for finding a specific tag or object within the project.

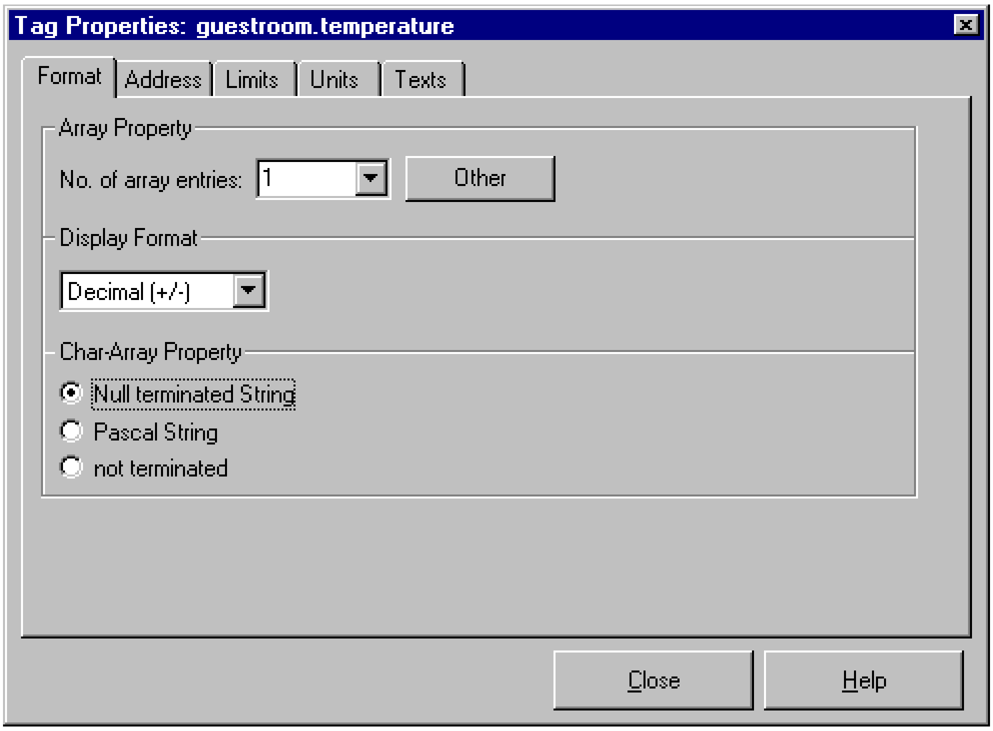
Import

Imports tags from different formats.

See also Import

7.3 Format

7.3.1 Format



Tag Properties: guestroom.temperature

Array Property

No. of array entries: 1

Display Format

Decimal (+/-)

Char-Array Property

● Null terminated String

○ Pascal String

○ not terminated

This is used for setting the number of array elements, the display format and the Char array settings. The selection fields are not available for all tag types.

Array Properties

The number of elements can be set with bit, byte, word, double word, float and error tags. The predefined array sizes can be selected, or a number can be entered directly. If the number of elements is set to 1, it is a single tag and not an array. With character array tags, this entry field selects the number of characters. This field is not always visible.

Note:
With addressed tags and arrays, the number of elements must be adjusted according to the data size supported by the PLC (predefined selection). The data sizes possible vary according to the PLC used (see PLC Informations). With byte, word, double word, float tags the same Limits apply for all array elements. All elements of a bit array have the same preset value.
Char-Array:
The length defined here is the total length including the termination!

Display Format

This selection field is only available for byte, word and double word tags and is used for selecting the display format. The following formats are supported:

Decimal	Numbers 0..9 always positive
Decimal +/-	Numbers 0..9, Sign, msb is the sign
Hex	Numbers 0..9, letters A..F
Binary	Numbers 0 and 1
Octal	Numbers 0..7
BCD	Numbers 0..9

Note:
Values entered via the system keyboards are normally entered in decimal format. The User Defined Keyboard functions can be used to implement numeric keypads for entering values in HEX format.

Char-Array Property

A character array could also be called a text or string. They are used to display a string on the MMI and change it via the alphanumeric keypads. Char arrays can also be transferred to the PLC. Three formats described below can be used for transferring the string to the PLC. Char array tags that were defined as Read/Write tags (Data Direction) can either be read continuously via the polling rate or the reading can be controlled via the system structure ‘Control Block ’.

See also PLC Text

Display Format

Text	Alphanumeric display
Password	Display as *

Note:
In 'Password' display format, the content of the Char Array is represented as * for the whole project.

Null-terminated String

The string on the PLC is saved as a null-terminated string, i.e. the end of the string is permanently assigned "ASCII 0".

Pascal String

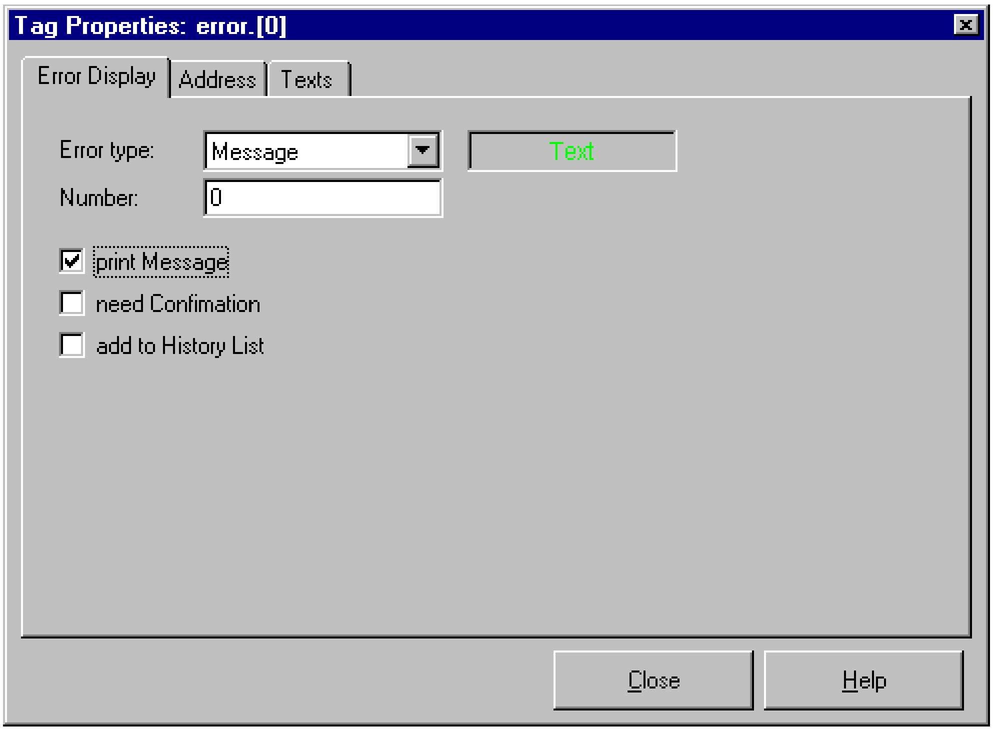
The string is saved on the PLC as a so-called Pascal string, i.e. the length of the string is saved at the first memory location (Byte).

not terminated

The string is saved without additional characters.

7.4 Error Display

7.4.1 Error Display


Tag Properties: error.[0]

Error type: Message

Number: 0

☑ print Message

□ need Confimation

□ add to History List

These settings are only relevant for error tags and the panel is therefore not available with other tag types.

Error Type

Three different types of messages are possible. Depending on the type of message, the error is shown in a specific color in the Error Window. The type of message only determines the color. The colors of the three types of messages can be selected in the Error Window dialog.

Number

The error number can be displayed, if required, in a column inside the Error Window. The number can be selected as required and different tags can also have the same error number.

Print Message

If this option is selected, the message can be printed out with different special functions. A message is always printed out in the three columns Status, Time/Date and Error Text as with the display within the Error Window.

Note:
This option is determined by the 'Add to History List' option.

See also Print Online All, Print Online Errors and Print History

Need Confirmation

If this option is selected, the errors must be confirmed with one of the special functions 'Error confirm all', 'Error confirm' and 'Error confirm (actual window)'. If the option is not selected, no confirmation is necessary. Errors can be confirmed in two different ways which can be set in the 'Errors and Confirmation Mode' dialog. The two variants differ in the time when the confirmation is carried out. Either confirmation is only possible after the error has been removed, or confirmation is always possible.

See also Error confirm, Error confirm all and Error confirm (actual window)

Add to History List

If this option is selected, the error tag is logged in the history. For every entry at the time of the error event the history contains an entry when the error is removed, and if the 'Need Confirmation' option is selected, the time of the confirmation. Special functions can be used to switch the view within the Error Window between the current error and the history.

See also Show History On/Off, Print History, Clear all Histories

7.5 Address

7.5.1 Address

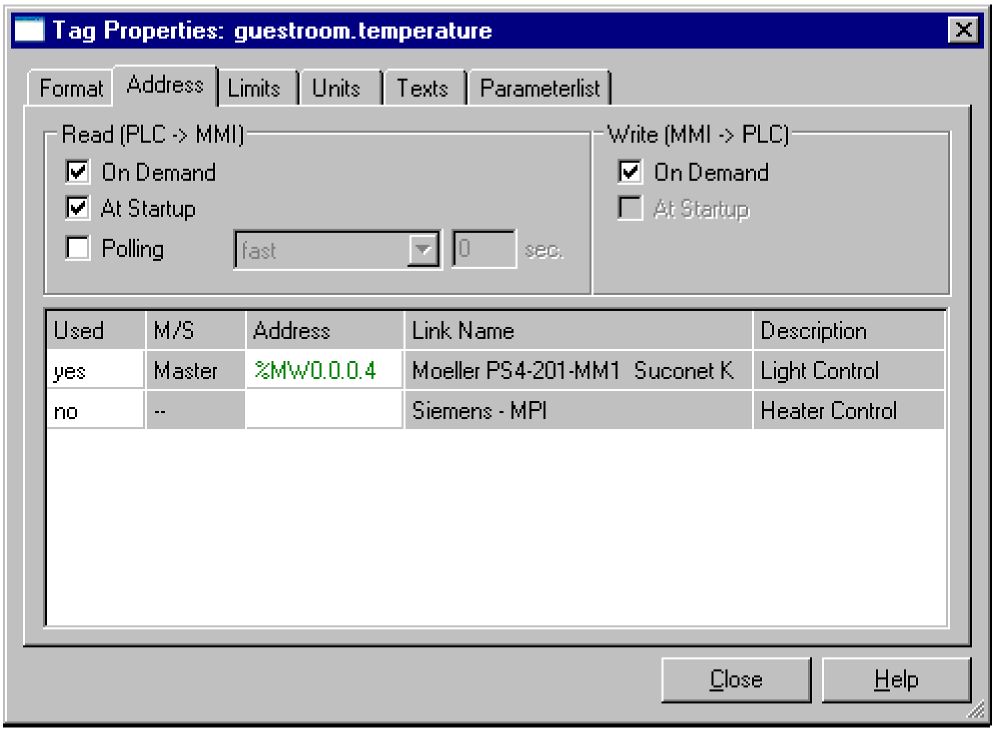
The communication between the MMI and the PLC must be understood (see also chapter "Communication principle" in GRS.HLP) before tags can be properly addressed.

The following points should be taken into account in order to minimize the communication cycle time:

- Depending on whether a tag, an array or a structure is addressed directly, the tags are exchanged with the PLC individually, the entire array or the entire structure are exchanged as a data package.
- Arrays can only contain tags of the same type. All array elements have the same preset value and the same limit values.
- Structures can contain different types of tags.
- If a structure is addressed, this can only contain **tags with the same data direction**, otherwise the entire structure will exchange data with itself.
- An address can be assigned to every tag, array or structure. These tags are termed **directly addressed** tags. The subsequent addresses of tags within an array or structure are automatically issued and generated. The data within the structures have a specific alignment, depending on the PLC used. For example, word tags are always assigned to even addresses and the structure is therefore "filled" with dummy tags. For more information on this refer to the chapter 'Memory Alignment of Structs'.
- Tags that are not addressed cannot communicate with the PLC.

Note:
To optimize communication, the tags of a mask should be combined in arrays or structures. Depending on the PLC used, the data packets sent to the PLC must meet specific size requirements (e.g. even number of bytes up to max. 128, see Syntax information). This means that the directly addressed tags, arrays or structures must meet these requirements. If this is not the case, an error message will be output during compiling and the data size of the array or structure must be adjusted accordingly. In all cases, an individual tag must be changed to an array (see Array Properties).

The following dialog is used for entering addresses:



Read (PLC -> MMI)

☑ On Demand

☑ At Startup

☐ Polling fast 0 sec.

Write (MMI -> PLC)

☑ On Demand

☐ At Startup

Used	M/S	Address	Link Name	Description
yes	Master	%MW0.0.0.4	Moeller PS4-201-MM1 Suconet K	Light Control
no	--		Siemens - MPI	Heater Control

Data Direction

The data direction can be set for directly addressed tags.

Read (PLC -> MMI)

On Demand

Operations that cause the MMI to update the actual values: e.g. : Saving recipes.

> **Note:**
> This setting is not used for displaying tag values! A tag must always be polled for this.

At Startup

The data is read from the PLC when the MMI is started if they are relevant for the display.

Polling

In order to display tag values, they must be polled from the PLC! A slower polling rate should be set for data that changes slowly so that other data can be read more frequently. The 'fast' setting causes the data to be sent as quickly as possible, depending on the volume of data to be transferred and the cycle time of the MMI, the PLC and the PLC protocol in use. The "fast" or "1 s" setting is recommended when it is difficult to decide which polling rate to set.

With Char array tags, it is also possible to set the polling rate "none". In this case the tag is not polled but only read if this is controlled via the 'Control' system structure. More information on the Control Block is provided in the GRS.HLP documentation.

Write (MMI -> PLC)

On Demand

Operations that cause the MMI to update the actual values: e.g. Value entry

At Startup

Data that is always sent to the PLC when the MMI is started. The MMI is thus the master for this data. At present this option cannot be changed!

Note:
Tags with only 'write attributes' can be addressed to several PLCs. Refer to the GRS.HLP documentation for information on the data transfer between the MMI and the PLC.

Object

Caution: Objects are always transferred in their entirety. In other words, the entire structure is written to the bus every time an element is changed, for example, when an entry is made. The user must therefore ensure that all the elements of an object have permissible values! After the panel is started up, an object only has permissible values once it has been initialized or once all the elements of the object have been assigned a value.

Find/Replace

Clicking this button will open the Find/Replace dialog for PLC addresses. The function is described under chapter 'Find/Replace Address' .

Address Definition

The field is divided into the following columns:

Used
With directly addressed tags, the column contains a 'Yes' otherwise a 'No'. When using several PLC connections, the field can be controlled with the left mouse button. Otherwise it is purely a display field. A tag with the Data Direction ‘**Write**’ can be transferred to several PLCs. Tags assigned the 'Read' data direction can only be addressed and used for one PLC direction.

Master/Slave or M/S
This field determines the master for this tag. It is only relevant when several PLC connections are used, and determines the PLC from which the data should be read for data synchronization, and the PLC to which the data should be sent. The exact description of the Data Synchronisation is provided in the GRS.HLP documentation.

Address
This field contains the PLC address of the tag concerned. With directly addressed tags, this field can be controlled using this left-mouse button. Using this field will cause the dialog described below to appear.

PLC Name
The PLC name displays the relevant PLC connection. This field is purely for displaying information and cannot be edited.

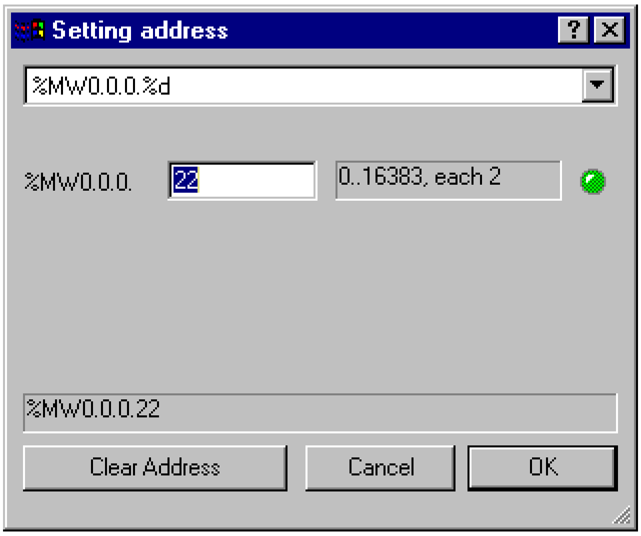
Description
Description to the PLC.

Note:
A line is provided within the field for each PLC connection used (see also Selecting the PLC).

The PLC address is displayed in the address field. A correct PLC address is shown in green, and an incorrect one in red. If the field is empty, it is an internal tag. This field can be edited with directly addressed tags, arrays or structures (white background color). A non-editable address field is shown with a light gray background color.

Left-clicking the mouse button inside the field will open one of the following dialogs for entering the PLC address. PLCs can either be '**Memory Image**' or '**String Reference**' PLCs.

The following dialog appears with ‘**Memory Image**’ PLCs:

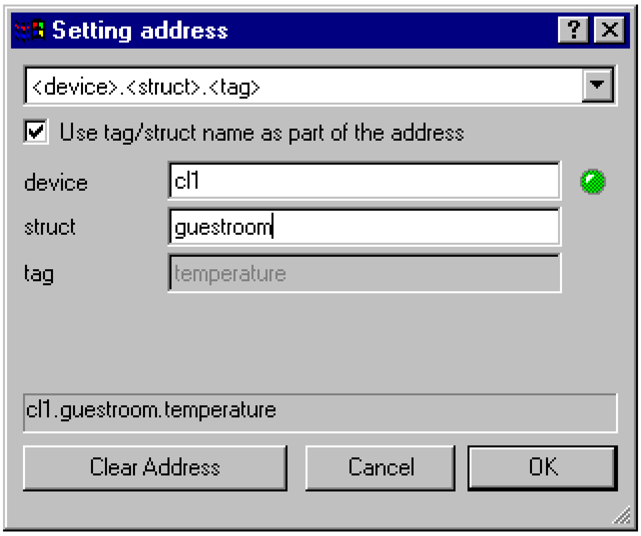


%MW0.0.0.%d

%MW0.0.0. 22 0..16383, each 2

%MW0.0.0.22

and the following with ‘**String Reference**’ PLCs:



<device>.<struct>.<tag>

☑ Use tag/struct name as part of the address

device cl1

struct guestroom

tag temperature

cl1.guestroom.temperature

Different elements within the dialogs are visible depending on the PLC and protocol used. The selection field at the top of the dialog shows the different address types (e.g. register range, marker range, inputs and outputs etc.). Different address types can be selected depending on the PLC used and the current tag type.

With 'Memory Register' PLCs:
The marker and register ranges can be entered within the entry fields. Only numbers can be entered. The fields on the right of the editable fields are displayed in the permissible number ranges.

With 'String Reference' PLCs:
Upper and lower case letters, numbers, the underline '_' and the period character '.' can be used as text references.

The green 'light' at the right of the dialog indicates that the PLC address is valid. Invalid PLC addresses are indicated with a red 'light'.

The display field at the bottom (above the buttons) shows the entire PLC address entered once more for information purposes. Clicking **OK** will accept the PLC address and close the dialog. Clicking **Cancel** will close the dialog without changing the address.

Note:
Incorrect and invalid addresses will cause communication errors on the MMI.

Delete Address
Clicking this button will delete the address and close the dialog.

Use Tag/Structure Names as Part of the Address
Selecting this option will cause the tag and structure names to be used automatically as part of the address string. This option is only available with string reference PLCs.

Data Synchronization

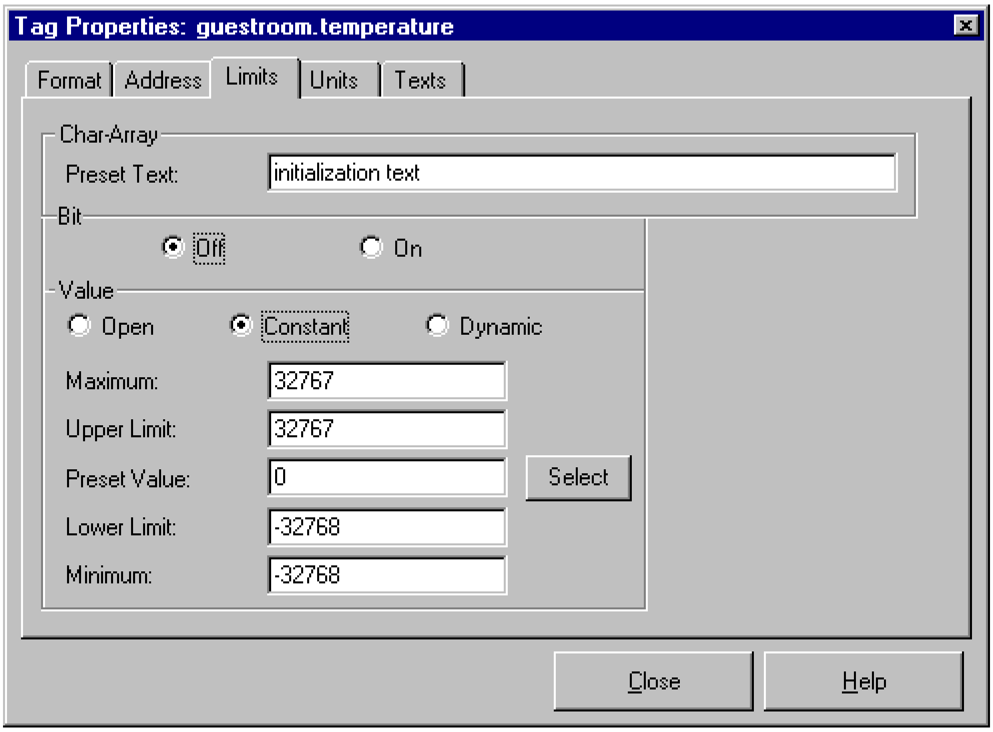
Data synchronization is started automatically during the startup of the GRS or GPI. All the tags that can be changed by the Touch Panel (tags, arrays, or "Write" and "Read/Write") are read once from the PLC.

The interface defined as master (see Address), is the interface for the data synchronization. The interface can only be set if more than one interface is used, and with tags, arrays and structures of type "write".

For more information see also Data Synchronization in GRS.HLP

7.6 Limits

7.6.1 Limits



Char-Array
Preset Text: initialization text

Bit
● Off ○ On

Value
○ Open ● Constant ○ Dynamic

Maximum: 32767
Upper Limit: 32767
Preset Value: 0
Lower Limit: -32768
Minimum: -32768

Preset Text of Char-Array

A text can be preset for a character array so that the Char-Array tags have a defined state if there is no PLC connected (device working offline) or when internal tags are used (no transfer to PLC). The length of the text is restricted to the Array length minus the termination.

Preset Value of Bit Tags

A BIT tag can be preset so that a defined BIT tag status is set (Off / On) if a PLC is not connected (device operating offline).

Limits of Value-Tags

A VALUE Tag can be assigned limit values. With bit tags, only the preset value is set.

Note:
The values are always specified in decimal format, irrespective of the data format (decimal, hex, binary, octal, BCD)! All values are PLC values, i.e. without a conversion (see Units and Conversion Factors).

The system supports the following limit values:

Maximum

Highest value (100%)

Entered values cannot exceed this value. This setting only affects display values if the value is shown in the form of a bargraph (calculation of the percentage value).

Upper Limit, Lower Limit

Limit value that can initiate a color change or flashing of the display when it is exceeded or undershot.

See also Bargraph, Value Entry / Display, Color.Font, Bitmap, Text

Preset Value

The preset value is used to start the device if no PLC is connected (device operating offline) or with internal tags (no transfer to the PLC).

For this see also Data Synchronisation in GRS.HLP

Minimum

Lowest value (0%)

Values cannot be entered that are below this value. This setting has no effect on display values if the value is shown as a bargraph (calculation of percentage value).

Open Limits (Open)

The Open option can be selected if specific limits are not required for a value. In this way, the limits are automatically set to the maximum value.

Size	Unsigned	Signed
BYTE	0..255	-127..128
WORD	0..65535	-32768..32767
DWORD	not possible	-2147483648 ..2147483647
FLOAT	not possible	-3.402823466e+38F .. +3.402823466e+38F

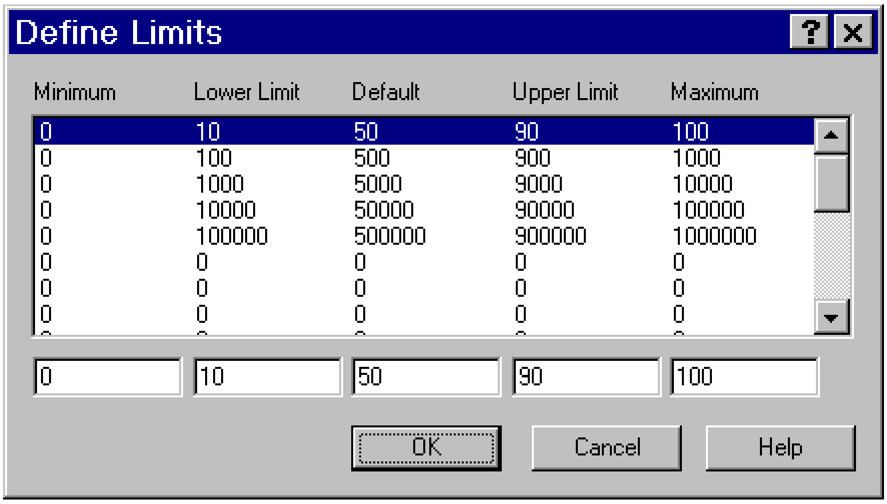
Note:
The float tags are saved in IEEE format. In other words, they consist of a sign, an exponent and the mantissa. As the mantissa is limited to 23 bits, the entire value range cannot be represented exactly. The project designer must therefore always bear in mind that inaccuracies occur with float tags! No exponent representation is used on the panel for entries and outputs.

Constant Limits (Constant)

The Constant option can be used to enter any value for each stage. It should be ensured, however that the value ranges are observed:

- Minimum must be less than maximum
- Lower limit must be less than upper limit
- Lower limit must be greater than minimum
- Upper limit must be greater than maximum
- Default must be between minimum and maximum

Clicking the **Select** button opens the following dialog:



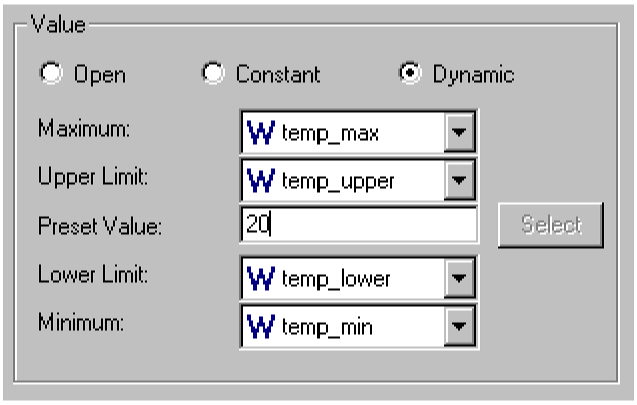
Define Limits

Minimum	Lower Limit	Default	Upper Limit	Maximum
0	10	50	90	100
0	100	500	900	1000
0	1000	5000	9000	10000
0	10000	50000	90000	100000
0	100000	500000	900000	1000000
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	10	50	90	100

This dialog is used to preset frequently used limit values. Only these preset values can then be selected and thus saves additional value entry.

Dynamic Limits (Dynamic)



Value

○ Open ○ Constant ● Dynamic

Maximum: temp_max

Upper Limit: temp_upper

Preset Value: 20

Lower Limit: temp_lower

Minimum: temp_min

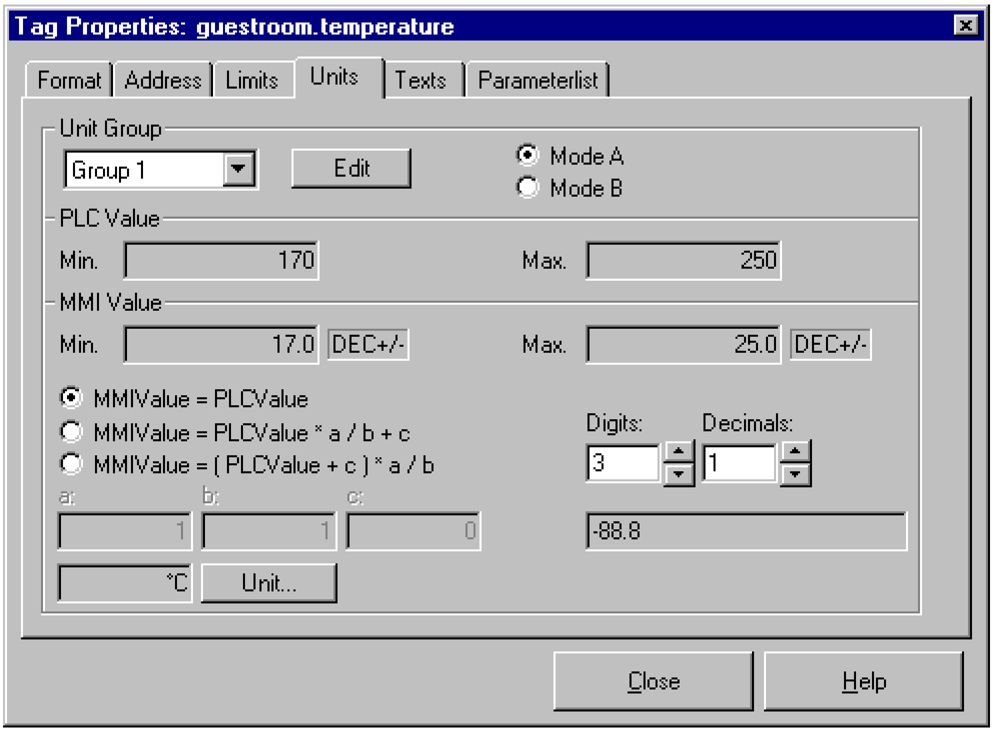
If limits may change during the runtime, dynamic limits can also be defined. In this case values are defined instead of tags. These values represent the value concerned.

Note:

Only tags of the same type (BYTE, WORD, DWORD, FLOAT) can be used as dynamic limit value tags!

7.7 Units and Conversion Factors

7.8 Units and Conversion Factors



Tag Properties: guestroom.temperature

Format | Address | Limits | Units | Texts | Parameterlist

Unit Group

Group 1 | Edit

● Mode A
○ Mode B

PLC Value

Min. 170 Max. 250

MMI Value

Min. 17.0 DEC+/- Max. 25.0 DEC+/-

● MMIValue = PLCValue
○ MMIValue = PLCValue * a / b + c
○ MMIValue = (PLCValue + c) * a / b

a: 1 b: 1 c: 0

°C Unit...

Digits: 3 Decimals: 1

-88.8

Values do not have to be displayed or entered in the same way as they are required or specified by the PLC. A linear conversion factor with an offset can be specified for adapting the values on the MMI and the PLC. The default setting is "MMI value = PLC value.

Unit Group Name

Each value can be represented in two units of measurement. The Group Name field is used to select a group of units of measurement. None is the standard setting. If "None" is selected, switching between Mode A and Mode B is not possible..

If a group other than "None" is selected, it is possible to switch between the settings of Mode A/B within the Fields a, b, c, MMI Value, Conversion Mode, Unit..., Digits and Decimals.

Several tags can belong to the same group. Unit Group 1..10 On/Off of the Unit of Measurement Functions group (see also Function Key) makes it possible to switch between Mode A and Mode B. All tags belonging to this group are reconverted and shown.

For example, there may be a group called "Temperature °C<->°F". This kind of group has assigned to it all tags with temperature values °C or °F. In order to show the values in both Mode A in °C and in Mode B in °F, the following settings are required:

	Mode A	**Mode B**
Conversion Mode:	MMIValue = PLCValue	MMIValue = PLCValue* a / b + c
a	1	9
b	1	5
c	0	32
Unit	°C	°F

Another group could be used to implement the conversion between mm and inch values and kilometers and miles. It is also possible to define a group called "America - Europe" and assign all tags for millimeters and inch, kilometers and miles, °C and °F to this group. This would enable all units of measurement for one Mode (e.g. America or Europe) to be toggled simultaneously.

All tags that are to be converted together should be assigned to the same group and a special function of the Unit of Measurement Functions group should be implemented in the project.

Edit

This allows the group name to be created or edited for easy identification of the unit of measure group concerned.

Mode A/B

Mode A and Mode B allow two different settings to be made for the conversion between the PLC value and MMI value. Selecting this field will mean that the settings (Fields a, b, c, Conversion Mode, Unit..., Digits and Decimals) of Mode A can be shown and edited. This is also the case with Mode B.

See also Unit Group Name, Unit of Measurement Functions

PLC Value

Both fields (Min. and Max.) show the minimum and maximum values of a tag on the PLC.

MMI Value

The minimum (Min.) and maximum (Max.) value as shown on the MMI.

These MMI values are calculated with the multiplier a, divisor b and the offset c depending on the Conversion Mode. They are then shown according in Digits and Decimals.

The conversion of tag values is always carried out in both directions between the PLC and MMI.

The selected Format (DEC, DEC+/-, HEX, ...) is shown for information purposes above the Min. and Max. fields. The MMI values are shown in the corresponding format.

See also Fields a, b, c

Conversion Mode

The following three conversion modes can be selected:

MMIValue = PLCValue

In this conversion mode the values between the PLC and the MMI are not converted. The Fields a, b, c are not accessible and have no meaning.

MMIValue = PLCValue * a / b + c

In this conversion mode the values between the PLC and the MMI are converted using the equation specified.

Both MMI values (Min. and Max. fields) are calculated according to the defined equation and shown according to the specified settings in Digits and Decimals.

See also Fields a, b, c

MMIValue = (PLCValue + c) * a / b

In this conversion mode the values between the PLC and the MMI are converted using the equation specified.

Both MMI values (Min. and Max. fields) are calculated according to the defined equation and shown according to the specified settings in Decimals and Digits.

See also Fields a, b, c

Fields a, b, c

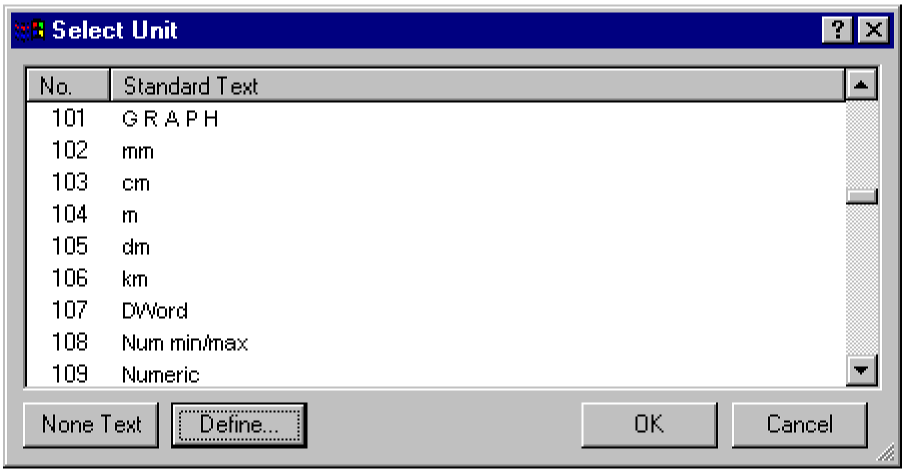
These fields contain the constants for the conversion between the MMI value and the PLC value.

Field	Description	Number range
a	Multiplier	Only positive numbers
b	Divisor	Only positive numbers greater than 0
c	Offset	Positive and negative numbers

Selecting the Conversion Mode "**MMIValue = PLCValue**" will make values for a, b, and c meaningless.

Unit...

The field under this button shows the unit of measure that can be shown with the value (see also Unit of Measurement Functions) . Use the "**Units...**" button to call up the following dialog to select or redefine the text required.



Select Unit

No.	Standard Text
101	GRAPH
102	mm
103	cm
104	m
105	dm
106	km
107	DWord
108	Num min/max
109	Numeric

A description of the fields in the above dialog is given in the section Text.

Digits

This setting is only possible for tags in **Byte, Word and Double Word** format.

Defines the number of digits required to display the value. This entry cannot not be less than the number of digits for the minimum or maximum MMI value (Min. and Max. fields). The number of digits must be at least one digit more than the number of decimal places (not including decimal point).

The number of digits cannot be modified during operation without changing the unit of measurement (see also Unit of Measurement Functions).

If the locations defined here for displaying a value are not completely utilized, the remaining locations are filled with zeros (see value entry / display: lead zero).

See also Decimals

Decimals

Defines the number of decimal places of the value to be displayed.

The number of decimal places cannot be modified during operation without switching to Unit of Measure (see also Unit of Measurement Functions).

Byte, Word, DWord

When this type is displayed, the point is moved by the corresponding number of decimal places. In other words, the value is reduced by a potential of 10.

Example: value: 25636 decimals: 2 display: 256.36

Float

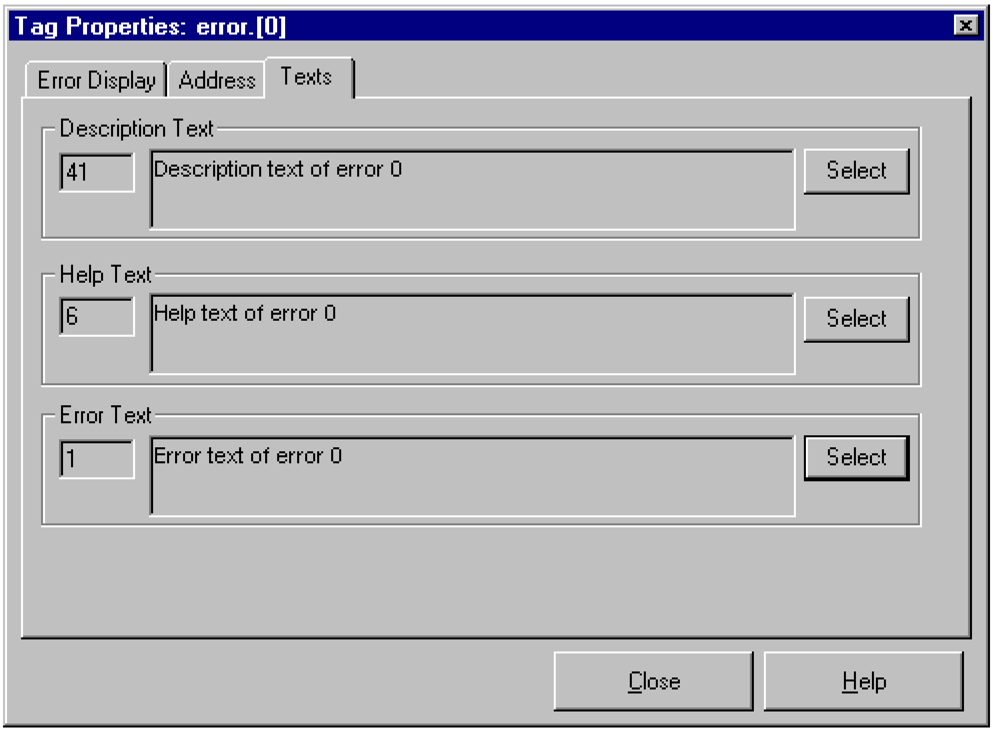
Float tags are displayed with the value and the corresponding number of decimal places.

Example: value: 123.254 decimals: 2 display: 123.25

See also Digits

7.9 Texts

7.9.1 Texts



Tag Properties: error.[0]

Description Text: 41 — Description text of error 0

Help Text: 6 — Help text of error 0

Error Text: 1 — Error text of error 0

Texts can be assigned to each tag. The two fields show the text number (left) and the text (right). Three different text types can be selected. Only certain text types are possible, depending on the tag type concerned.

Description Text

The description text of a tag is used in conjunction with the 'Parameter List' object and describes the tag and its function.

Help Text

The Help text is shown in a 'Help Window' object. The Help text of the tag can be called via the special functions 'Error help' and 'Show Tag Help'. These functions are used in conjunction with the 'Error Window' and 'Parameter List' objects. Within the objects it is possible to select a line and then display the Help text using the special functions.

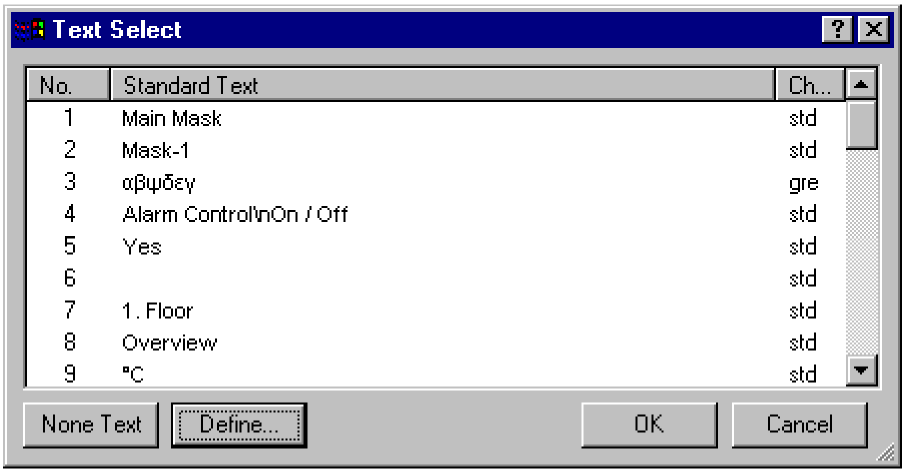
Error Text

The error text can only be used with error tags and is shown inside the Error Window. This is also the text that is printed out in conjunction with the special functions 'Print Online Errors', 'Print History', etc. .

See also Print options (Overview)

Selection

This button is used to select and modify the required text. Clicking the button will open the following dialog:



No.	Standard Text	Ch...
1	Main Mask	std
2	Mask-1	std
3	αβψδεγ	gre
4	Alarm Control\nOn / Off	std
5	Yes	std
6		std
7	1. Floor	std
8	Overview	std
9	°C	std

Define...

If the required text does not yet exist, click Define to call up the dialog box for defining error or help text. This dialog is used to define new texts as well as to edit existing texts.

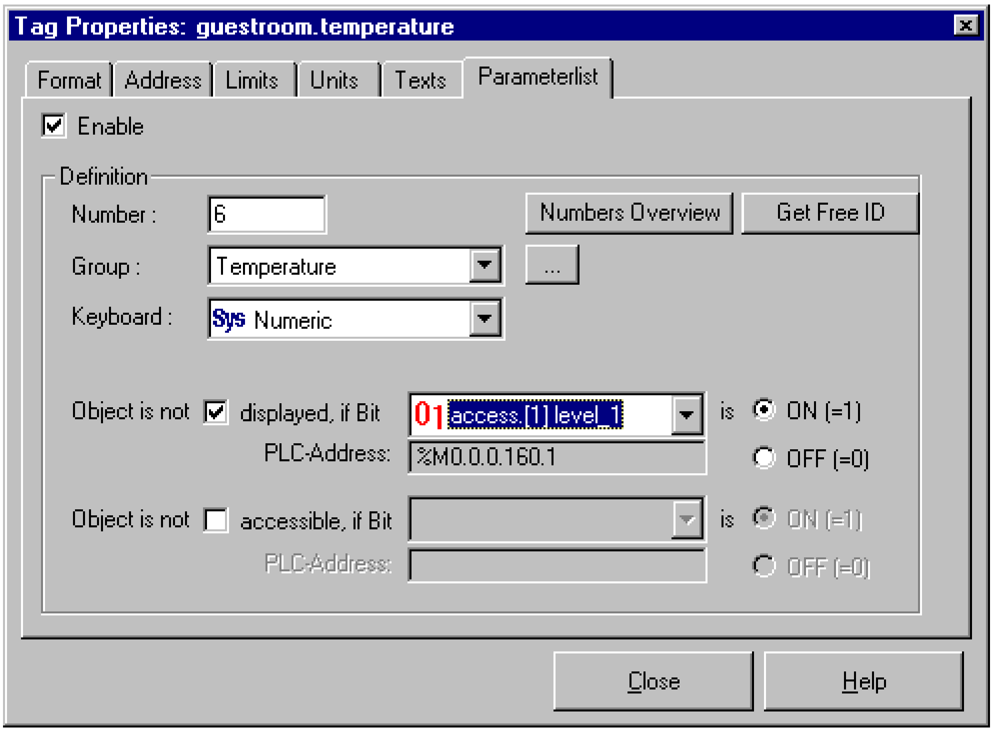
See also Standard Text, Error Text, Help Text

None Text

Click this button to select an empty error or help text.

7.10 Parameterlist

7.10.1 Parameter List



☑ Enable

Definition

Number : 6

Group : Temperature

Keyboard : Sys Numeric

Object is not ☑ displayed, if Bit 01 access.[1] level_1 is ● ON (=1) ○ OFF (=0)

PLC-Address: %M0.0.0.160.1

Object is not □ accessible, if Bit is ● ON (=1) ○ OFF (=0)

PLC-Address:

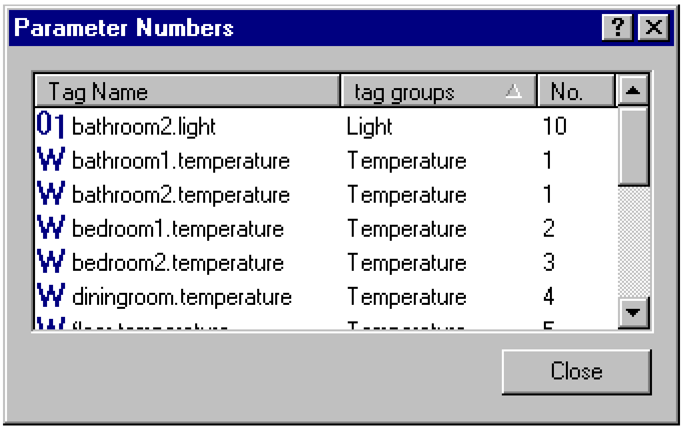
This dialog is only available if the 'Enhanced Functions' dialog has the 'Use Parameter List' option checked.

Note:
These tag settings are only used in conjunction with the 'Parameter List' object.

Enable
The remaining settings can only be made if this option is selected.

Number

The number is shown inside the Parameter List object. Different tags can be assigned the same number. Use the **Number Overview** button to call the following dialog which shows the numbers already used.

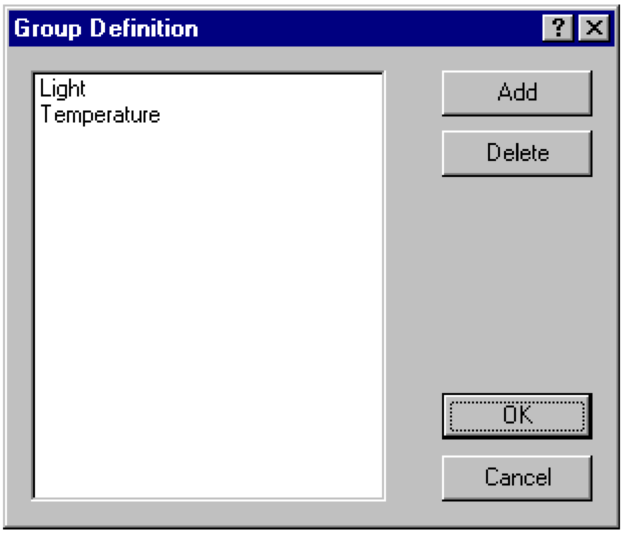


	Tag Name	tag groups △	No.
01	bathroom2.light	Light	10
W	bathroom1.temperature	Temperature	1
W	bathroom2.temperature	Temperature	1
W	bedroom1.temperature	Temperature	2
W	bedroom2.temperature	Temperature	3
W	diningroom.temperature	Temperature	4
W	floor.temperature	Temperature	5

The sort order within the dialog can be changed by selecting the column headers. Use the '**Next Free No.**' button to find the next free number and then place it in the **Number** field.

Group

Each tag used in a Parameter List object must be assigned to a group. Within the parameter list object the group is used to specify which tags are displayed. Group designation can be added with the '**...**' button. All groups already defined are contained in the selection field.



Light
Temperature

Keyboard

If a keyboard has been selected, the tag value can be modified directly within the Parameter List object.

Object is not displayed

The object is not shown within the Parameter List object if the selected **Bit tag** is in the corresponding **ON** or **OFF** state. As soon as the state of the bit tag changes, it will either be displayed or will no longer appear in the display.

See also Accessibility

Object is not accessible

The tag within the Parameter List object is shown, the tag value cannot be changed if the selected **bit tag** is in the appropriate **ON** or **OFF** state. The display is always refreshed irrespective of whether the tag value can be edited or not.

See also Accessibility

7.11 Import

7.11.1 Import

The import function allows the tags of a PLC project to be imported or the changes to PLC project to be transferred to the Galileo project by means of a re-import.

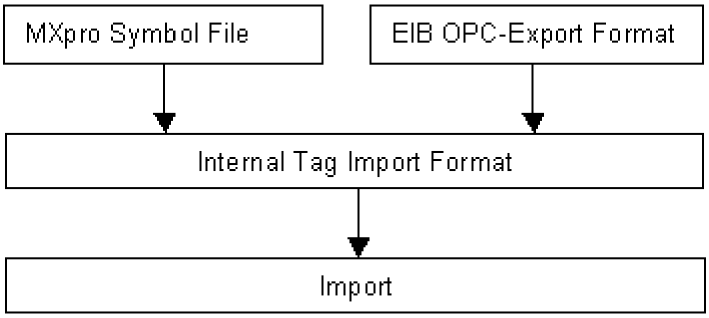
The changes are carried out in accordance with the following points. The address is important for the comparison:

- A tag that already exists is left as it is.
- Tags that are not yet in the Galileo project are generated again.
- Tags that are already in the Galileo project but not in the import file are deleted taking into account the Options set.

Names, types and addresses are transferred with the import.

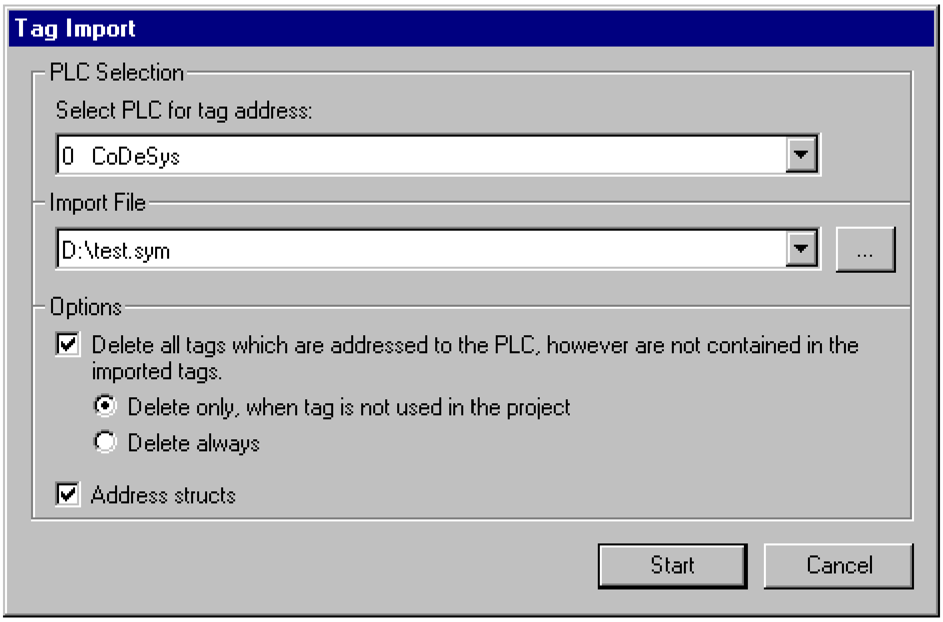
The following file formats are supported:

- Internal Tag Import Format (*.itf)
- MXpro symbol table (*.sym)
- EIB OPC export format (*.esf)



Unless a file is opened with the internal tag import format, the import file is firstly converted to the internal tag import format and saved as a file. This file is then automatically imported in a second step.

Note:
As the import always refers to a PLC, the selecting the PLC option must be defined first of all without fail.



Tag Import

PLC Selection

Select PLC for tag address: 0 CoDeSys

Import File: D:\test.sym

Options

☑ Delete all tags which are addressed to the PLC, however are not contained in the imported tags.

● Delete only, when tag is not used in the project

○ Delete always

☑ Address structs

PLC Selection

The imported tag addresses are addressed to the PLC selected here. If several PLCs are defined in the Galileo project, the import can be carried out several times in order to import the tags of different PLCs.

Import File

Select the file to be imported.

Options

The following settings can be used to define whether tags that are no longer in the import file are to be deleted. This comparison, however, only applies to tags that are addressed to the selected PLC.

Delete only, when tag is not used in the project

During the import, all the tags are deleted that are addressed to the selected PLC but are no longer contained in the import file. These tags are then only deleted if they are not used in the project.

Delete always

During the import, all the tags are deleted that are addressed to the selected PLC but are no longer contained in the import file. The tags are always deleted, even if they are still used in the project.

Address structs

This setting enables the imported structures to be addressed automatically. However, the structure is only addressed if it is created again. With multiple imports, the addressed structures remain unchanged. If structures are used inside structures, only the lowest structures are addressed in order to prevent the creation of large communication blocks.

7.11.2 Internal Tag Import Format (*.itf)

Internal Tag Import Format (*.itf)

Note:
This file can be processed with any text editor, such as Microsoft Excel®. The program must support text files with tabs and must not replace them with spaces when they are saved.

The file starts with a header line that is ignored during the import. The format of this file must distinguish between String Referenced PLC and Value Referenced PLC.

String Referenced PLC

The string-referenced PLCs include 'MXpro', 'A. Bradley ControlLogix' etc.

The tags must be saved in the following format, with the columns separated by tabs:

Name	Type	Device	Program	Structure	Tag	Index
var_bit	BIT				var_bit	
var_byte	BYTE				var_byte	
prog1.var_int	INT		prog1		var_int	
device.prog1.var_float	FLOAT32	device	prog1		var_float	
array_bit[10]	BIT				array_bit	0
struct.var_word	WORD			struct	var_word	

…

Name

Contains the tag name including the complete structure. Arrays can be defined in one line, and the array size must be appended to the file name with [xy].

Type

This column contains the format of the tags:

Type	Range
BIT	0..1
BYTE	0..255
SINT	-128..127
WORD	0..65535
INT	-32768..32767
DWORD	0..4294967295
LINT	-2147483648..2147483647
FLOAT32	-3.402823E+038..3.402823E+038
STRING	

Device, Program, Structure, Tag, Index

The Device, Program, Structure, Tag and Index columns represent the string-referenced address. The index column is only used for arrays. The addressing of the 0th element starts with this index.

Value Referenced PLC

The value-referenced PLCs include 'Moeller PS4-341-MM1 Suconet K', 'Siemens MPI' etc.

The tags must be saved in the following format, with the columns separated by tabs:

Name	**Type**	**Address**
var_bit	BIT	ST2:DB20.DBB60.0
var_byte	BYTE	ST2:DB20.DBB40
prog1.var_int	INT	ST2:MB4
device.prog1.var_float	FLOAT32	ST2:MB10
array_bit[10]	BIT	ST2:DB10.DBB2.0
struct.var_word	WORD	ST2:AB10
…		

Name

Contains the name including the complete structure. Arrays can be defined in one line, and the array size must be appended to the file name with [xy].

Type

This column contains the format of the tag:

Type	**Range**
BIT	0..1
BYTE	0..255
SINT	-128..127
WORD	0..65535
INT	-32768..32767
DWORD	0..4294967295
LINT	-2147483648..2147483647
FLOAT32	-3.402823E+038..3.402823E+038
STRING	

Address

This column contains the identical address to the one used in Galileo.

8 User Defined Keyboards

8.1 User Defined Keyboards

Galileo provides several kinds of keyboards for entering numeric and alphanumeric values and texts (see Keyboards). The system also provides keyboards for password management (see Password Functions) and recipe management (see Recipe Functions).

The facility is also provided for users to define their own keyboards. These user-defined keyboards can be created as normal masks, with the mask type set for the type of keyboard required (see Mask Settings).

The position of the keyboard is defined by the mask when it is called. The following Display 'Value/Text', Display 'Value/Text' in Hex and Key 'Window Move' functions can be used to also change the position of the keyboard online on the MMI.

The user-defined keyboard can also be drawn with a 'transparent' background (see Mask Color) so that the objects of the mask beneath it are still visible. Non overlapping objects are also redrawn if, for example, PLC values change.

Numeric Keyboards are used for entering numbers, as required, for example, with Bargraph, Value Entry and Password Control objects.

Alphanumeric Keyboards are used for entering texts such as with the PLC-Text object or for entering the user or passsword in the Password Control.

The Keyboards for Password Administration are used to create a user-defined dialog for logging in, changing the password etc.. See also Password Functions.

Note:
User-defined masks behave in the same way as system masks, for which the following applies: Within system masks, the mask by which the system mask was called is always the "**current**" mask. Tags on the "**current**" mask are transferred although the system mask is opened.

8.2 Numeric Keyboards

The following special functions are provided for creating a numeric keypad (number entry):

- '0' key to '9' key
- Inc '1' and Dec '1' as well as Inc '10' and Dec '10'
- 'ESC' key
- 'RET' key
- 'RET' key with Script Function
- 'Clear' key
- 'Backspace' key
- '.' key
- Key 'number'
- Key 'number' with 'RET'
- Display 'Value/Text' and Display 'Value/Text' in Hex
- Display 'Maximum' and Display 'Minimum'
- Display 'Maximum' in Hex and Display 'Minimum' in Hex
- Call Script Function on Mask Entry

See also Character Entry and Keyboards

8.3 Alphanumeric Keyboards

The following special functions are provided for creating an alphanumeric keypad for entering texts:

- 'a' key to 'z' key
- 'A' key to 'Z' key
- 'ESC' key
- 'RET' key
- Key 'RET' with Script Function
- 'Backspace' key
- 'Clear' key
- Various punctuation characters such as '.' key, ':' key, ';' key, ',' key, '!' key and '#' key
- '@' key
- Key 'number'
- Key 'number' with 'RET'
- Display 'Value/Text'
- Call Script Function on Mask Entry

See also Character Entry and Keyboards

8.4 Keyboards for Password Administration

The following special functions are provided for creating a user-defined keyboard for password administration:

- Password 'Level'
- Password 'User'
- Password 'Password'
- Password 'Password New'
- Password 'Password Confirm'
- Display 'Value/Text'
- 'ESC' key
- 'RET' key

User-defined password keyboards are called with the special functions:

- User Login -userdef.
- Login at Level x -userdef.
- Change Level -userdef.
- Change PW (Level x) -userdef.
- Change PW (other User) -userdef.

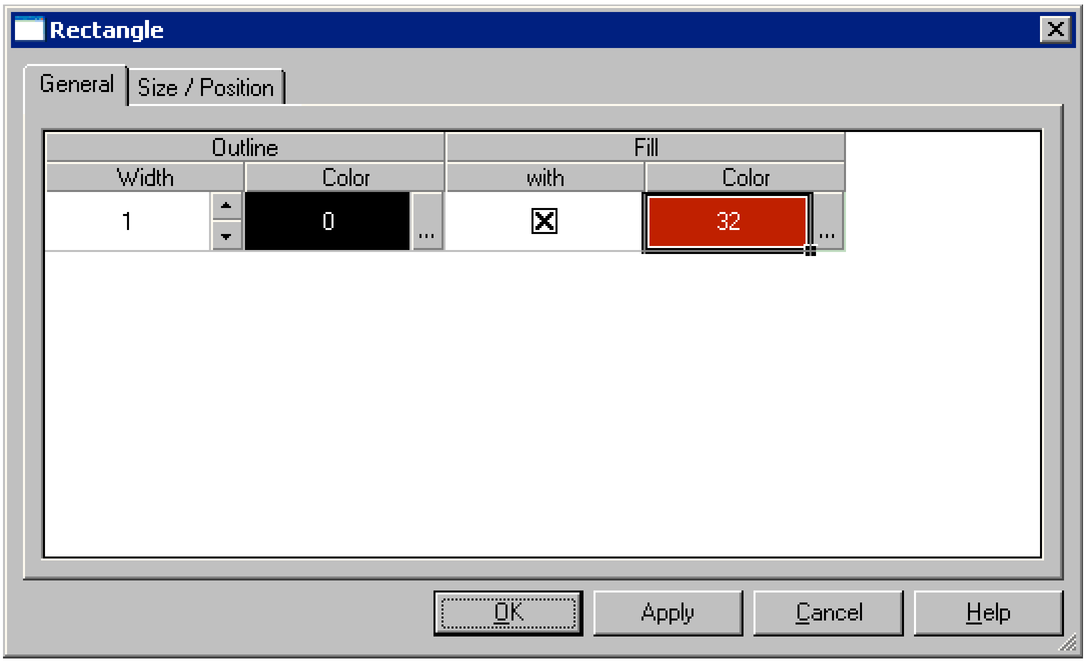
- Change PW (Own) -userdef.

See also Password Functions

9 Static Objects

9.1 Properties of static objects

9.1.1 Properties of static objects



Outline		Fill	
Width	Color	with	Color
1	0	☒	32

The static objects Line, Rectangle, Rounded Rectangle, Ellipse and Polygon are configured via the same dialog box.

Unlike dynamic objects, static objects are always displayed, i.e. they cannot be switched on and off.

See also General and Accessibility

Outline Width

Line thickness in pixels of the object drawn or its frame (max. 20 pixels).

Outline Color

Color of the line or frame of the object drawn.

Fill Color

Fill color of the object if the None check box has not been activated.

If the None check box has been activated, the object will be drawn without a fill color (transparently).

Line

A straight line in any color.

Rectangle

Rectangle in any color that can be filled in any color or made transparent.

Rounded rectangle

Rectangle in any color that can be filled with any color or left transparent. The corner points are drawn with a radius that can be set as required.

Ellipse

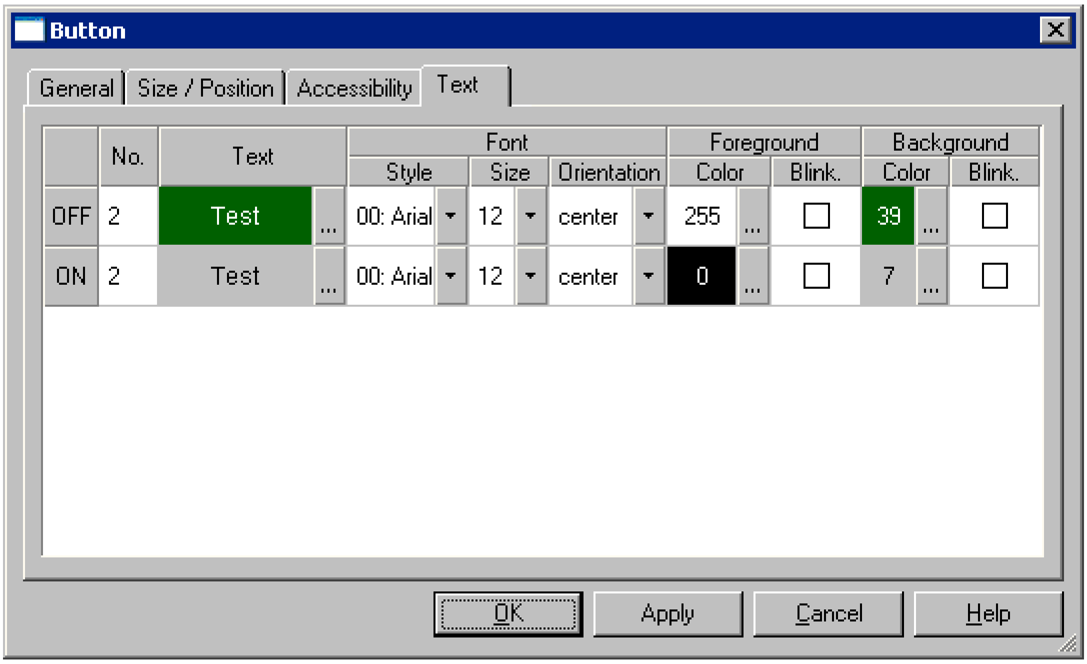
Ellipse in any color that can be filled with any color or made transparent. The radius can be modified on the X and Y axes.

Polygon

A corner point of the polygon is inserted at every position where the left mouse button is clicked. The polygon is completed by double-clicking (left mouse button) the start of the or by pressing ESC.

9.2 Text

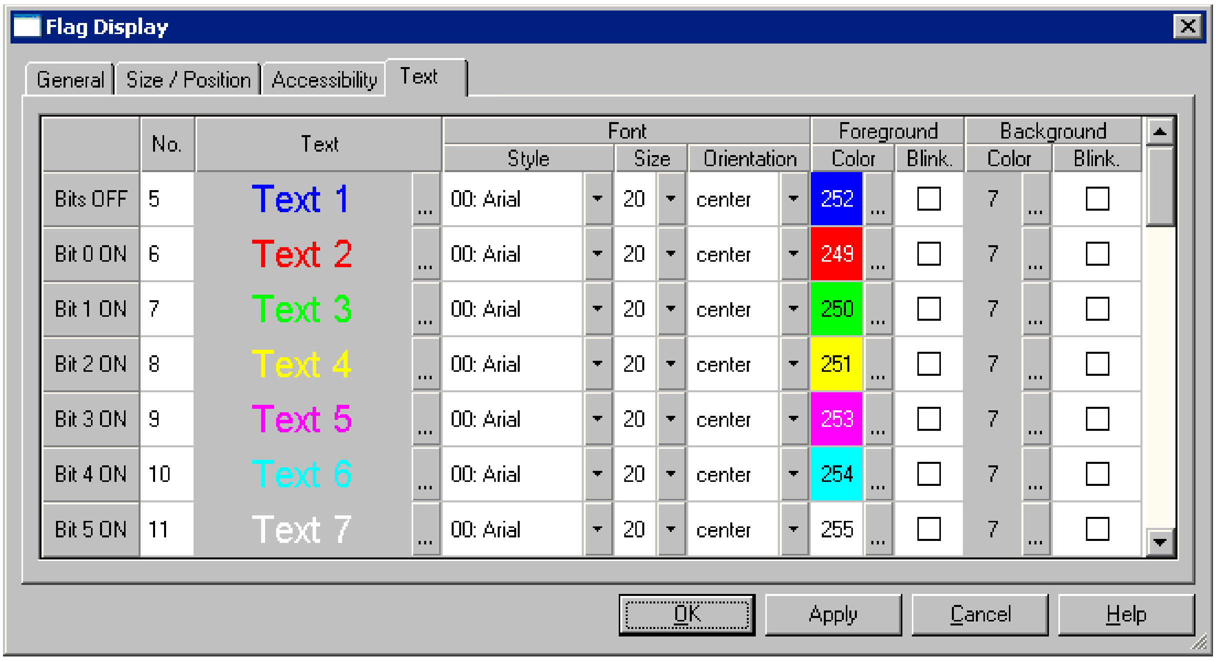
9.2.1 Text



	No.	Text	Font			Foreground		Background	
			Style	Size	Orientation	Color	Blink.	Color	Blink.
OFF	2	Test ...	00: Arial	12	center	255 ...	□	39 ...	□
ON	2	Test ...	00: Arial	12	center	0 ...	□	7 ...	□

This dialog is used by different objects (i.e. Text, Mask Change, Button, etc.). The property dialog of the static object "Text" does not include the panels "General" and Accessibility. Which controls are shown and/or disabled depends on the type of the object.

For Flag Display the dialog can also have the following appearance depending on the current settings:



	No.	Text	Font			Foreground		Background	
			Style	Size	Orientation	Color	Blink.	Color	Blink.
Bits OFF	5	Text 1	00: Arial	20	center	252	☐	7	☐
Bit 0 ON	6	Text 2	00: Arial	20	center	249	☐	7	☐
Bit 1 ON	7	Text 3	00: Arial	20	center	250	☐	7	☐
Bit 2 ON	8	Text 4	00: Arial	20	center	251	☐	7	☐
Bit 3 ON	9	Text 5	00: Arial	20	center	253	☐	7	☐
Bit 4 ON	10	Text 6	00: Arial	20	center	254	☐	7	☐
Bit 5 ON	11	Text 7	00: Arial	20	center	255	☐	7	☐

Dialog for selecting a standard text with the following selectable:

- No.
- Text
- Font style
- Font size
- Alignment (left, right, center)
- Foreground color (text color)
- Background color
- Blinking attribute of the foreground or background

No.

Shows the text number of the text in the "Text" field. The number can be changed directly with an entry. If the "No." header is right-clicked, you can choose "Properties" to define the same text number for all entries in the list. Use "Define Sequence" to assign consecutive Text Index Number to the states.

See also Text Sequence

Text

Preview window for checking the appearance of the selected font, font size and colors.

A text can be selected via the ... button.

Font Style

For selecting the font in which the selected text is to be shown in the object.

This list contains all the font styles that can be selected.

Additional font styles and font sizes on request.

Font Size

For selecting the font size in which the selected text is to be shown in the object.

This list contains all the available font sizes of the font style selected. Not all font styles have the same font sizes.

Additional font styles and font sizes on request.

Note:
To use non-Roman character sets such as Cyrillic and Greek the selected font must also support these characters. Otherwise the wrong characters will be displayed.
See also Enhanced Functions, Languages

Alignment

For defining whether the selected text is to be left-justified, right-justified or centered in the object.

Foreground

For selecting the font color for the text to be shown in the object.

Background

For selecting the background color of the object.

This selection is only available if the None Background check box is activated.

Blinking

For defining whether the text or its background is to flash. The flash effect is caused by changing alternately the text and background color.

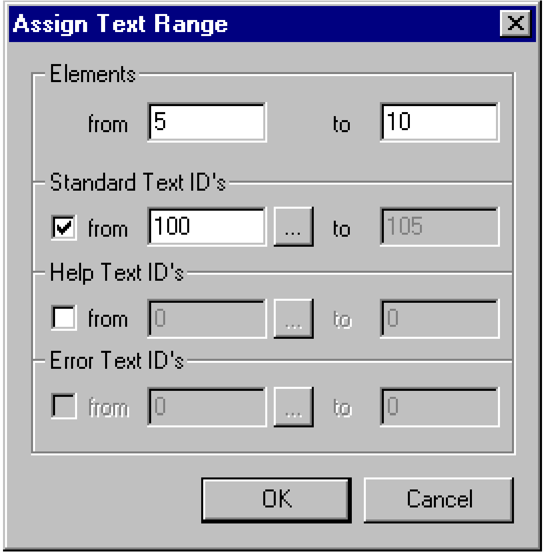
This attribute is available with dynamic objects.

None Background

Activating this check box will cause the text to appear in the object without a background.

9.2.2 Sequence

Text Sequence



Assign Text Range

Elements
from 5 to 10

Standard Text ID's
☑ from 100 to 105

Help Text ID's
□ from 0 to 0

Error Text ID's
□ from 0 to 0

This dialog is used to assign consecutive text index numbers in tags or states. It is possible to define here the range for which tags and which states are to be set with which text index.

States/Elements

Defines the range of states/elements that are to be assigned to the text index numbers.

Standard Text ID's

Defines the text index range for standard texts.

Help Text ID's

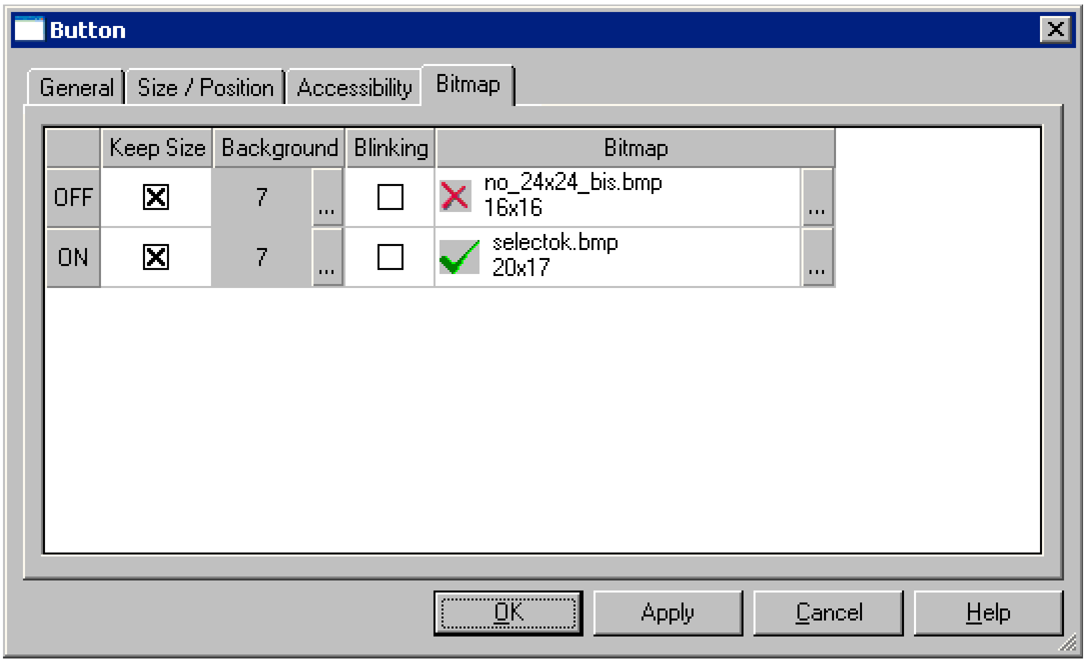
Defines the text index range for Help texts.

Error Text ID's

Defines the text index range for error texts. This option is only available for error tags.

9.3 Bitmap

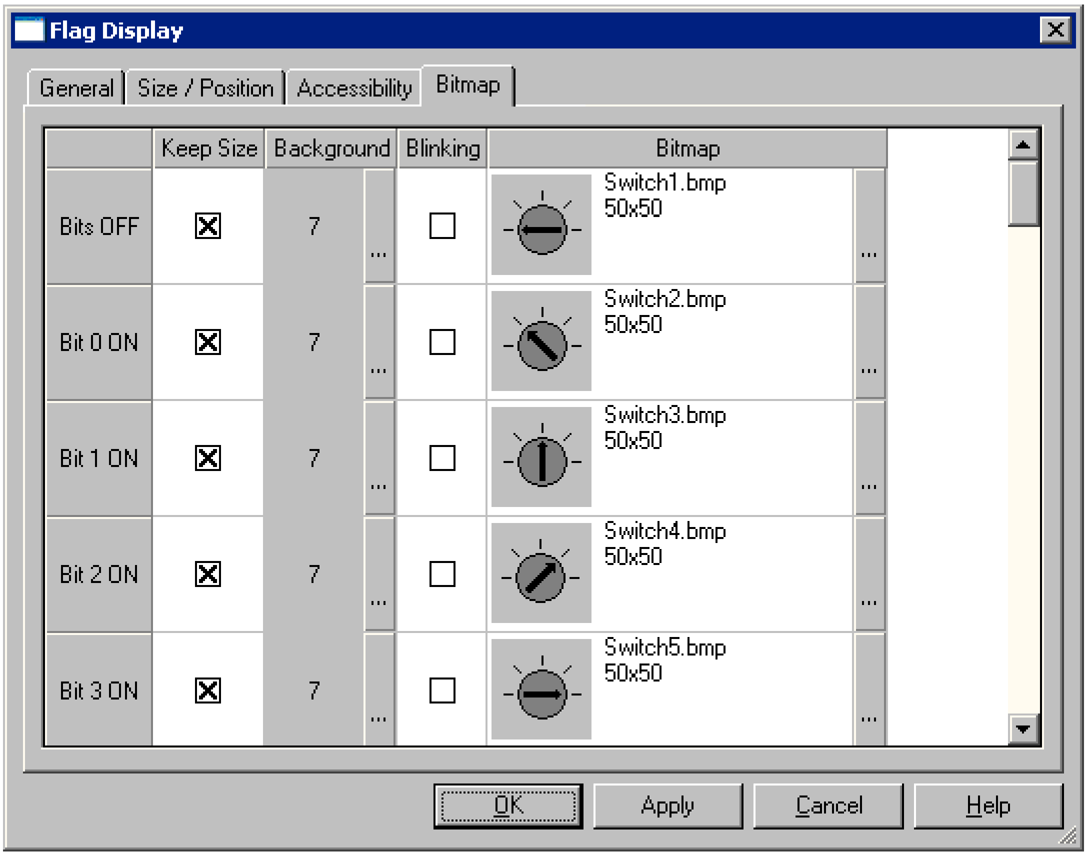
9.3.1 Bitmap



	Keep Size	Background	Blinking	Bitmap
OFF	☒	7 ...	□	✗ no_24x24_bis.bmp 16x16 ...
ON	☒	7 ...	□	✓ selectok.bmp 20x17 ...

The dialog shown above is used by different objects, such as Bitmap, Button, Mask change, etc.. The General and Accessibility panels are not available with static Bitmap objects. The various operating elements are either active or dimmed according to the object concerned.

Depending on the setting the Flag Display dialog may have the following appearance:



	Keep Size	Background	Blinking	Bitmap
Bits OFF	☒	7 ...	□	Switch1.bmp 50x50 ...
Bit 0 ON	☒	7 ...	□	Switch2.bmp 50x50 ...
Bit 1 ON	☒	7 ...	□	Switch3.bmp 50x50 ...
Bit 2 ON	☒	7 ...	□	Switch4.bmp 50x50 ...
Bit 3 ON	☒	7 ...	□	Switch5.bmp 50x50 ...

This dialog is always used for editing bitmaps in the design software.

Pictures with all color depths are permissible when designing projects in Galileo. The pictures are saved with the same color depth in the "Image" directory in 'BMP' format. When the project is compiled, the color depth of the pictures is reduced to the selected color depth of the MMI.

Note:
The same color depth is displayed in the Project Inspector as on the MMI.

Pictures with a higher resolution than the screen of the MMI cannot be processed (error message). The resolution of a screen can, for example, be reduced with the Windows Paint program.

Keep Size

If the Keep Size check box is active, the object cannot be smaller than the size of the picture. If the object is smaller than the picture, it is automatically adjusted to this picture size. If the object is larger than the picture, the picture is centred in the object. The picture outline is then the color that was selected in the Background list.

If several states use pictures of different sizes with the Keep Size attribute, the object is the size of the largest picture.

If the Keep Size check box is activated, the picture size is always adjusted with every state to the size of the object.

Background

If a picture is to be shown with the Keep Size attribute, the outline of the picture is drawn in the corresponding color.

This list is only available if the Keep Size check box is activated.

Blinking

The blinking effect is caused by inverting the colors of the picture. This attribute is only available with dynamic objects. and is therefore not visible with static objects.

Bitmap

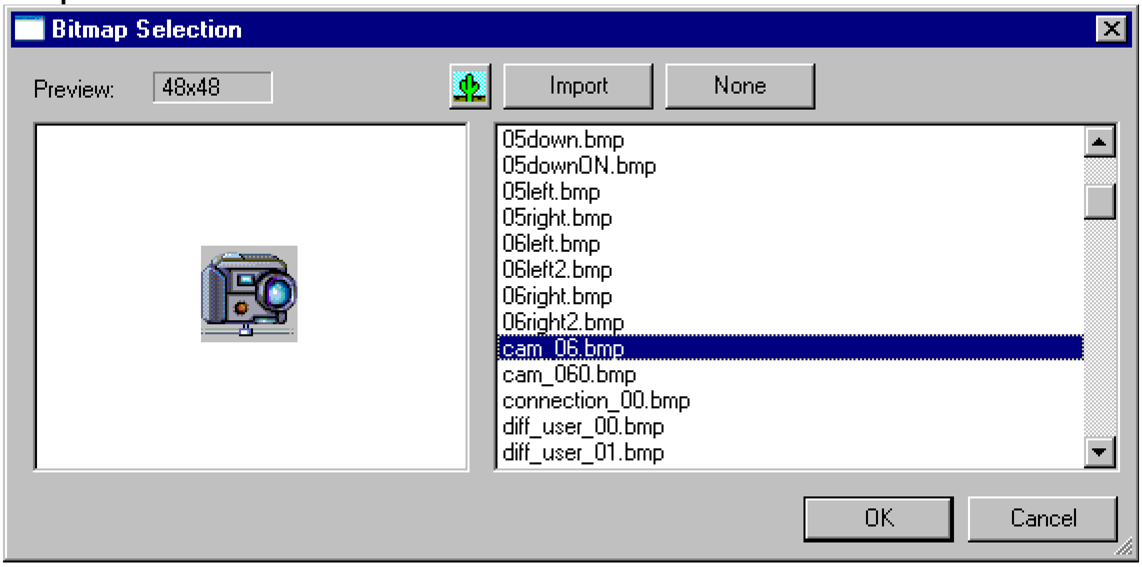
Im Feld "Bitmap" wird das ausgewählte Bild, der Dateiname und die Originalgrösse des Bildes in Pixel im Fenster dargestellt.

A bitmap can be selected via the ... button.

See also Bitmap Selection

9.3.2 Bitmap Selection

Bitmap Selection



Preview: 48x48

05down.bmp
05downON.bmp
05left.bmp
05right.bmp
06left.bmp
06left2.bmp
06right.bmp
06right2.bmp
cam_06.bmp
cam_060.bmp
connection_00.bmp
diff_user_00.bmp
diff_user_01.bmp

Preview

The Preview fields are used to show the selected picture and its original pixel size.

Button

Click this button to start the bitmap editor program. The program can be selected, as described in the section Tools.

Import

A picture can be imported to the project directory by clicking the Import button.

Enter the name and path of the picture concerned in the file dialog box that will be called up. Clicking the Open button copies the picture to the project directory and adjusts the color palette automatically.

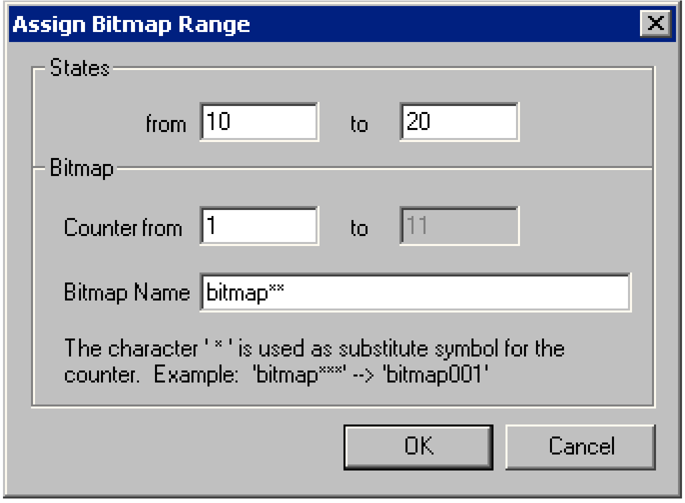
See also Using the picture as a background.

None

Click the None button to deselect a picture so that it is not shown. This will prevent a picture from being shown in an object.

9.3.3 Define Sequence

Define Bitmap Seqence



Assign Bitmap Range

States

from 10 to 20

Bitmap

Counter from 1 to 11

Bitmap Name bitmap**

The character ' * ' is used as substitute symbol for the counter. Example: 'bitmap***' --> 'bitmap001'

This dialog is used for defining consecutive bitmap names. The range can be defined for selected states are to be set with selected names.

States

Defines the range of states that are to be assigned the bitmap names.

Counter

Defines the number range with which the names are to be added.

Bitmap Name

Defines the name and the placeholder for the counter. The '*' character is used as placeholder. The placeholder is normally replaced right-justified by the counter. Redundant placeholders are filled with zeros.

Example 1:

Counter:	from 8 to 11
Name:	bitmap*
Result:	bitmap8, bitmap9, bitmap10, bitmap11

Example 2:

Counter:	from 8 to 11
Name:	bitmap***
Result:	bitmap008, bitmap009, bitmap010, bitmap011

10 Dynamic Objects

10.1 General

10.1.1 General

Unlike static objects, dynamic objects can change their contents if there is a data change in the PLC or manual operation on the MMI.

There are various kinds of dynamic objects depending on the function required.

- Objects for displaying a state inside the PLC (Flag Display, Value Entry / Display, Bargraph, Error Window, PLC Text, Parameter List)
- Objects for controlling data in the PLC from the MMI (Button, Switch, Value Entry / Display, Bargraph, Recipe, Parameter List, Slider)
- Objects that start or indicate special functions (Function Key, Mask Change, Help Window, Time/Date, Camera)

Three settings are the same for any dynamic object:

- Any dynamic object can be closed by a bit in the PLC (Accessibility)
- Every operable dynamic object can be deactivated by a bit in the PLC (Accessibility). This means that the object is displayed and refreshed, but it does not react when touched on the MMI.
- Each dynamic object can be shown with a 3D frame, simple frame or without frame.

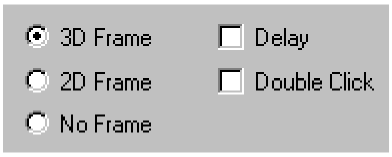
Touching a zone on the MMI can only cause one object to react - several functions cannot be executed by a single touch operation. If this is required, this must be triggered by a bit and programmed in the PLC. An object will be provided in a future version that enables freely programmable functions.

Objects for data display (status display, value display, bargraph without keyboard, Error window, PLC text) never react to a touch on the MMI and cannot therefore be assigned the attributes Delay or Double Click.

Most objects can be shown with texts, colored areas, pictures or made transparent.

10.1.2 Touch zone frames and attributes

Touch zone frames and attributes



● 3D Frame   □ Delay
○ 2D Frame   □ Double Click
○ No Frame

3D Frame

The button is drawn in 3D. The area for the button text is thus reduced by the width of the frame (1 pixels).

The colors for this 3D display (shadowed) can be set in the 2D/3D Settings dialog.

2D Frame

The button is framed with a line width of 1 pixel. The 2D/3D Settings can be set in the 2D/3D Settings dialog.

No Frame

The button is shown on the MMI without an outline. In GALILEO it is shown with a dotted line. Only the contents of the button is shown.

Delay

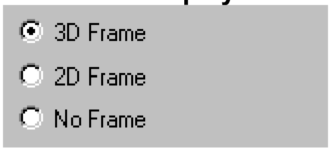
The touch zone on the MMI does not react until a specific time has elapsed. This can prevent a sudden or accidental actuation of a function. The delay time can be set in the Touch dialog box.

Double Click

The touch zone on the MMI does not carry out a function unless it has received two touch operations on the same object within a specified time. The time of this "double-click" can be set in the Touch dialog box.

10.1.3 Frames and displays

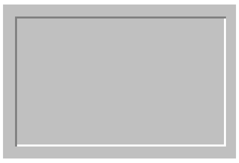
Frames and displays



● 3D Frame
○ 2D Frame
○ No Frame

3D Frame

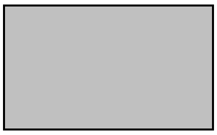
The display is outlined by a 3D frame. The area for the button text is thus reduced by 2 pixels (frame width).



The colors for this 3D display (shadows) can be set in the 2D/3D Settings dialog box.

2D Frame

The display is outlined with a frame 1 pixel in width. The color for this outline can be set in the 2D/3D Setttings dialog box.

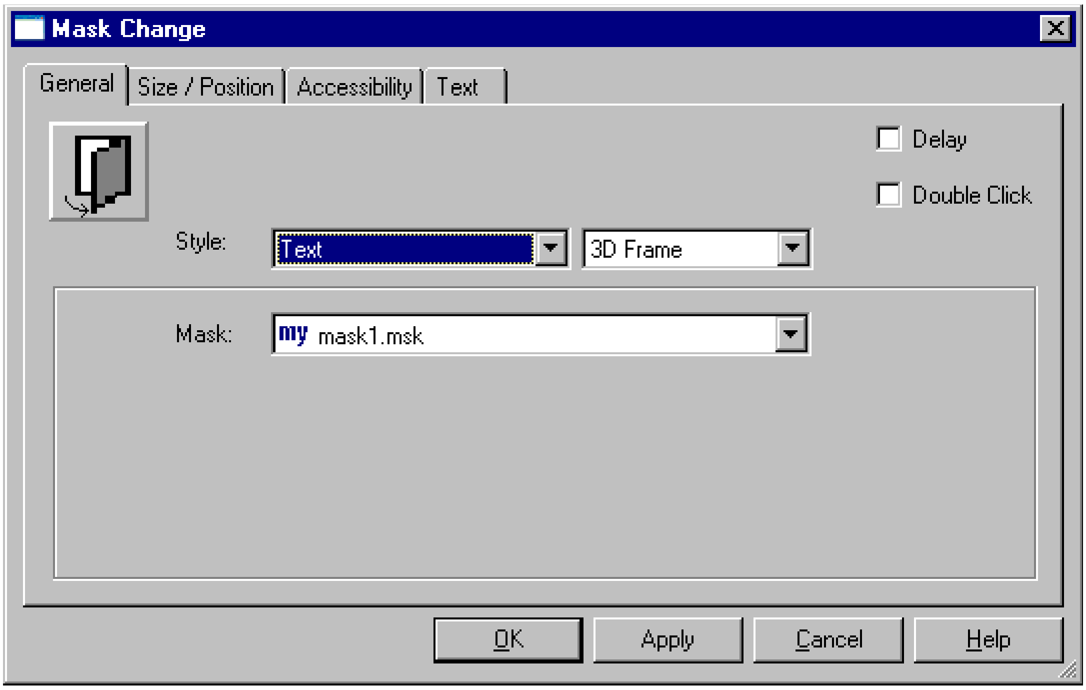


No Frame

The display is shown without a frame. Only the contents of the display are shown.

10.2 Mask Change

10.2.1 Mask Change



□ Delay

□ Double Click

Style: Text | 3D Frame

Mask: mask1.msk

This object enables a mask change to be triggered on the MMI. A mask change to any other mask in the project is possible. A mask change can also be triggered by the following functions:

- Screen Saver/Touch Disable
- Password management: After a Logout change to Mask...
- External mask change: Initiating functions from the PLC

Style

This setting enables the basic appearance of the object to be set.

- **Text**
  The button can be assigned a text. The texts are defined using the Define Text panel. Text selection and other settings such as font type, font size etc. are carried out on the Text panel.
- **Color**
  This button is shown as a colored area. The color can be selected from the Color Selection dialog that appears. No text is shown.
- **Bitmap**
  This button shows a picture. The pictures are selected in the Bitmap panel.
- **Transparent**
  The mask change object is transparent and not visible on the MMI. In the Galileo design software it is marked by a dotted line.

3D Frame, 2D Frame, No Frame, Delay, Double Click

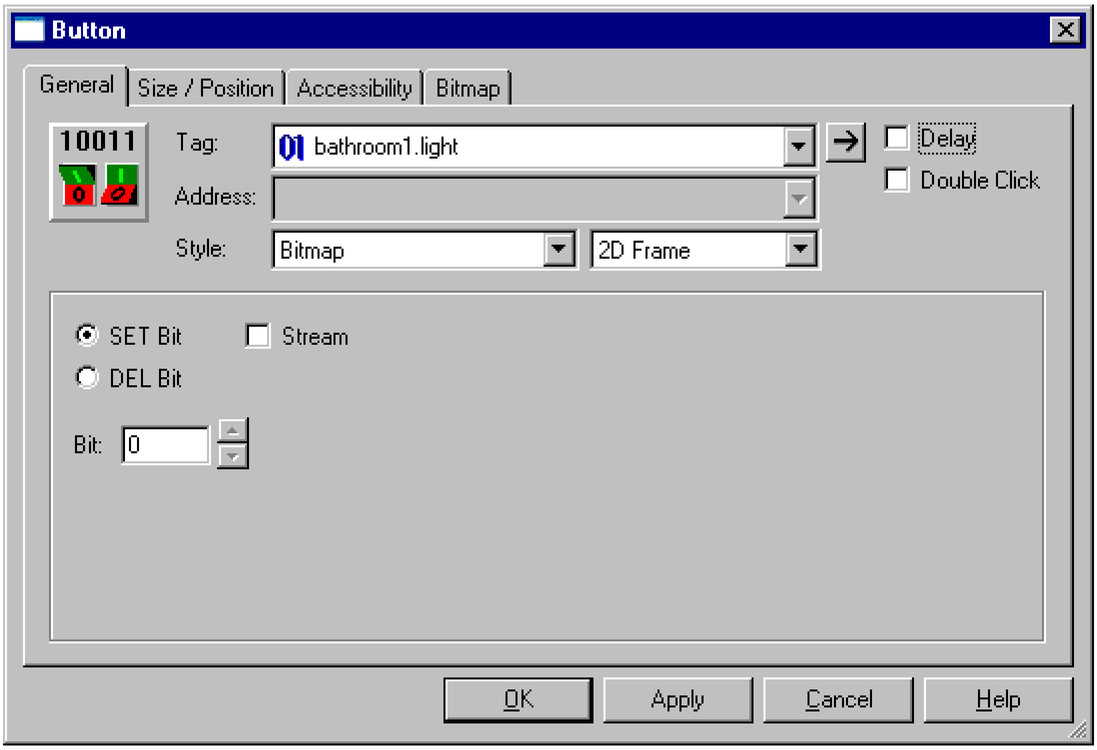
See description Touch zone frames and attributes

Mask

From this list you can select the mask which the MMI is to open when the button is pressed. This list shows all project masks - except for the mask in which the object is located.

10.3 Button

10.3.1 Button



Tag: bathroom1.light

Address:

Style: Bitmap | 2D Frame

☐ Delay

☐ Double Click

● SET Bit

○ DEL Bit

☐ Stream

Bit: 0

This object enables individual bits in the PLC to be set to 0 or 1.

Tag

Lists all existing tags of type BIT, BYTE, WORD and DWORD. The data direction must be MMI->PLC or MMI-PLC. One of these tags can be selected for the object.

Button →

Clicking this button will call up the Definition of Tags dialog immediately.

Address

This field shows the PLC address of the selected Tag.

If a Panel Type with several communications cards is used and the data block for this tag is sent to both PLCs, both addresses will be displayed. The addresses start with "0=" for the communications card in slot 0 and "1=" for the communications card in slot 1.

See also Definition of Tags

3D Frame, 2D Frame, No Frame, Delay, Double Click

See description Touch zone frames and attributes

Style

This setting allows the basic appearance of the object to be specified.

- Text
  The button can be assigned a text which is selected and defined on the Text panel. A text can be defined with a different color, font and font size for every state (ON/OFF).
- Color
  This button is also shown as a colored area. The color can be selected from the Color Selection dialog that appears. No text is displayed.
- Bitmap
  This button shows a picture. The pictures are selected on the Bitmap panel.
- Inverse
  The object is inverted when the bit is 1. An outline is not drawn.
- Transparent
  The button object is transparent and not visible on the MMI. In the Galileo design software it is marked by a dotted line.

SET Bit

Without Stream attribute

The bit (represented by the tag) is inverted in the PLC when the button is released ("0" to "1" and "1" to "0"). The ON state will be shown, if the bit is "1".

If the button is pressed by mistake, it is possible to move sideways out of the button whilst the button remains depressed. In this way the button can then be left without the function being triggered.

With Stream attribute

The bit is set to "1" when the button is pressed and set to "0" when the button is released.

DEL Bit

Without the Stream attribute

The bit (represented by the tag) is inverted in the PLC when the button is released ("0" to "1" and "1" to "0"). The OFF state will be shown, if the bit is "1".

With Stream attribute

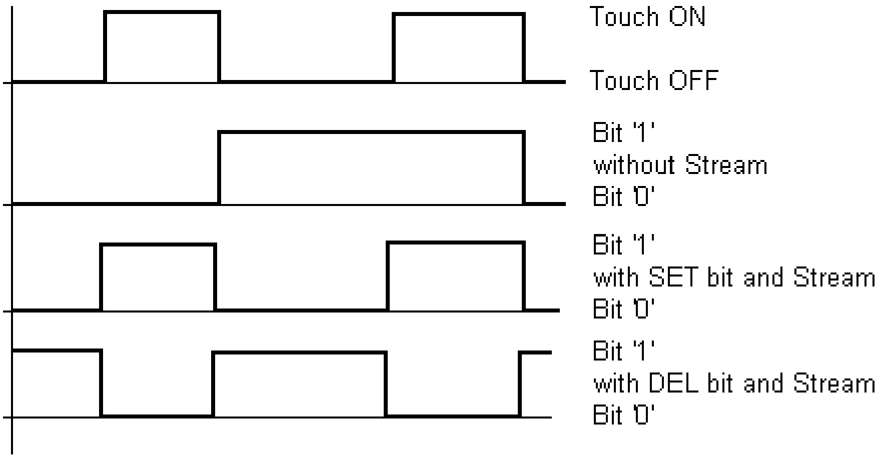
The bit is set to "0" when the button is pressed and set to "1" when the button is released.

Stream

This attribute defines the function of a button.

If Stream is activated, the bit will be set to 1 (or 0 with DEL bit is activated) when pressed. When the button is released the inverted value will be returned.

If Stream is not activated, the bit is inverted every time the button is released. Pressing the button does not activate any change of the bit.



Slope

Buttons that always send the same status when actuated (0 or 1) can be defined for special interfaces (e.g. installation bus EIBB). This option is not available for interfaces that do not support this function.

Clicking the Stream attribute determines whether the action is to be executed when the touch zone is touched or left.

With attribute "SET Bit"

This modes sets the bit to logic "1"

With attribute "DEL Bit"

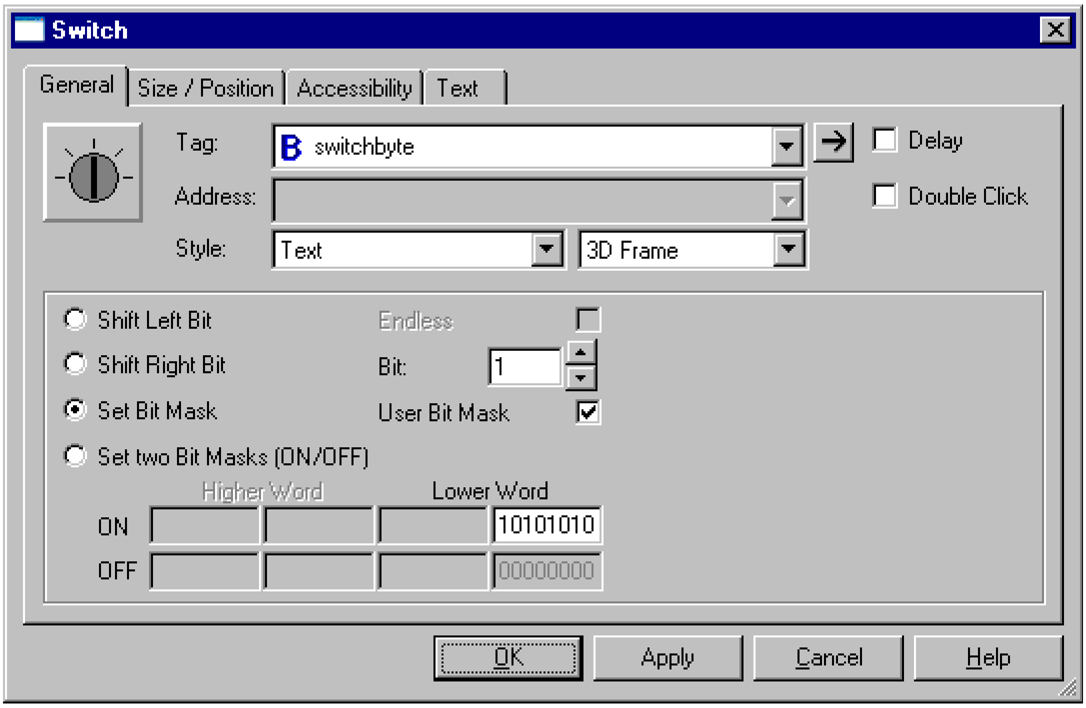
This mode resets the bit to logic "0".

Bit

Defines which bit is to be changed within the tag. With bit tags this setting is always 0.

10.4 Switch

10.4.1 Switch



Tag: switchbyte

Address:

Style: Text, 3D Frame

□ Delay

□ Double Click

○ Shift Left Bit

○ Shift Right Bit

● Set Bit Mask

○ Set two Bit Masks (ON/OFF)

Endless □

Bit: 1

User Bit Mask ☑

	Higher Word			Lower Word
ON				10101010
OFF				00000000

This object enables single or several bits in value tags (bytes, word or Dword in the PLC) to be set or cleared at the same time.

Pressing the button enables a tag to be set to a particular value or a bit to be moved to the left or to the right.

Tag

List of all available tags of type BYTE, WORD, DWORD. The data direction must be either MMI->PLC or MMI-PLC. One of these tags can be selected for the object.

Button

Clicking this button will call up the Definition of Tags dialog immediately.

Address

This field shows the PLC address of the selected Tag.

If a Panel Type with several communications cards is used and the data block for this tag is sent to both PLCs, both addresses will be displayed. The addresses start with "0=" for the communications card in slot 0 and "1=" for the communications card in slot 1.

3D Frame, 2D Frame, No Frame, Delay, Double Click

See description Touch zone frames and attributes

Style

This setting allows the basic appearance of the object to be specified.

- Text
  The button can be assigned a text which is selected and defined on the Text panel. A text can be defined with a different color, font and font size for every state.
- Color
  This button is also shown as a colored area. The color can be selected from the Color Selection dialog that appears. No text is displayed.
- Bitmap
  This button shows a picture. The pictures are selected on the Bitmap panel.
- Transparent
  The switch object is transparent and not visible on the MMI. In the Galileo design software it is marked by a dotted line.

Shift Left Bit

Every time the button is touched the bit is moved to the left within the tag (in the direction of the most significant bit).

Activating the Endless check box causes the bit to be moved to bit 0 when the switch button is touched and the most significant bit has already been reached. If the Endless check box is not activated, there will be no change in the tag.

Which bit is the most significant bit depends on the size of the tag and Steps setting (e.g. 5 steps = Bit 0..4 -> most significant bit is bit 4).

Shift Right Bit

Every time the button is touched the bit is moved to the right within the tag (in the direction of the least significant bit).

Activating the Endless check box causes the bit to be moved to the most significant bit when the switch button is touched and bit 0 has already been reached. If the Endless check box is not activated, there will be no change in the tag.

Which bit is the most significant bit depends on the size of the tag and Steps setting (e.g. 5 steps = Bit 0..4 -> most significant bit is bit 4).

Set Bit Mask

Touching the button on the MMI will cause the tag to be set to any value required.

If the User Bit Mask check box is activated, the value can be entered in binary format in the fields ON underneath it.

If the User Bit Mask check box is not activated the Steps/Bit setting can be used to define which bit in the tag is to be set to 1. In this configuration, only one bit can be set within the tag (all others will be set to "0").

If several switches are assigned the same tag, it is possible to configure them to toggle between the on and off state.

Function and display on the MMI:
Touching the button sets the tag to the value specified in the ON fields. The button is shown in the ON state if the appropriate bit has been set according to Steps/Bit, otherwise the button is shown in the OFF state.

If several switches are assigned the same tag, it is possible to configure them to toggle between the on and off state.

See also Set two Bit Masks ON/OFF, User Bit Mask, ON, OFF

Set two Bit Masks ON/OFF

When the button on the MMI is in the ON state, the tag is set according to the ON fields. When the button is in the OFF state, the tag is set according to the OFF fields.

If User Bit Mask is activated, the values can be entered in the ON and OFF fields below it in binary format.

If User Bit Mask is not activated, the "Bit" setting determines which bit in the tag is to be set to "1".In this configuration only one bit in the tag can be set, and all other bits are "0".

When used in conjunction with the Set two Bit Masks ON/OFF function, this field specifies the bit position at which the button is shown in the On state according to the preview.

Function and display on the MMI:
When the button is touched, the tag will be set to the value defined in the ON fields and will return to the value set in the OFF fields when released. The button is shown in the ON state if the appropriate bit has been set according to Steps/Bit, otherwise the button is shown in the OFF state.

See also Set Bit Mask, User Bit Mask, ON, OFF, Steps/Bit, ON, OFF

User Bit Mask

See also Set Bit Mask, Set two Bit Masks ON/OFF, ON, OFF

ON

These fields are used for the tag value assigned when the button is pressed. The fields are only used in conjunction with the Set Bit Mask, Set two Bit Masks ON/OFF and User Bit Mask functions. The number of fields used depends on the size of the tag.

OFF

These fields are used for the tag value assigned when the button is released. The fields are only used in conjunction with the Set two Bit Masks ON/OFF and User Bit Mask functions. The number of fields used depends on the size of the tag.

Endless

This check box is only available if the Shift Left Bit or Shift Right Bit option has been selected. This setting defines if the switch button has an end stop or not.

Steps/Bit

Steps
Use this field to define the number of steps of the switch button when using the Shift Left Bit and Shift Right Bit functions.

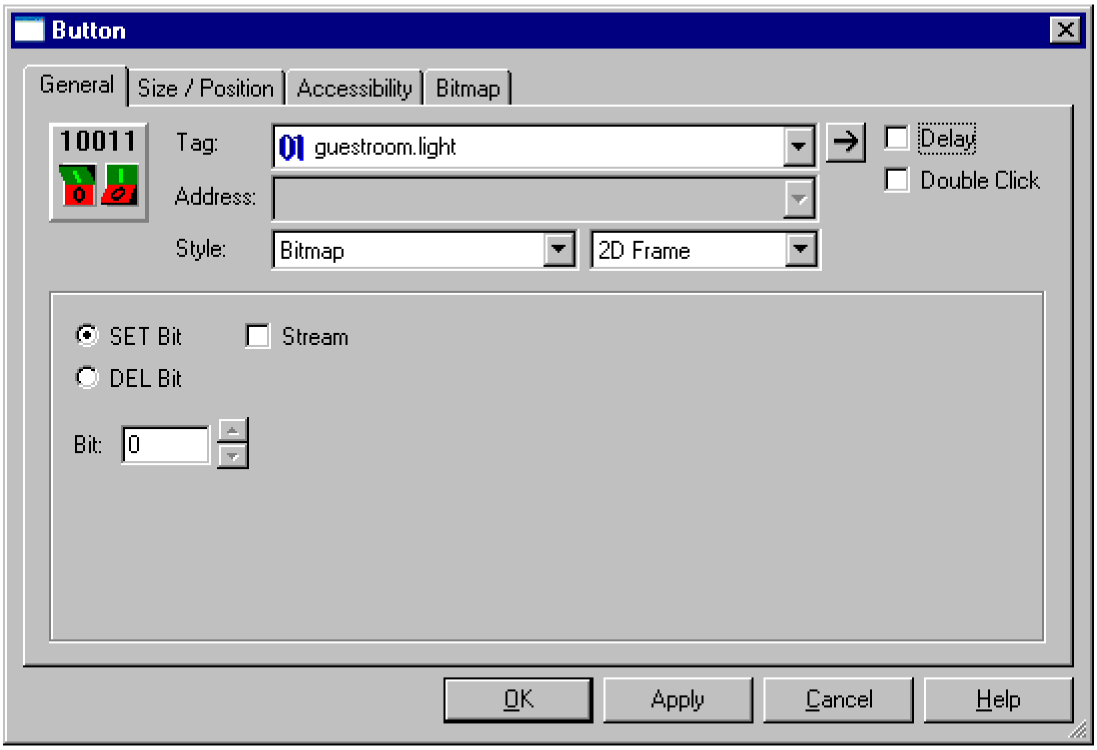
The number must not exceed the size of the tag (byte = 8, word = 16, Dword = 32).

Bit
When used in conjunction with the Set Bit Mask function, this field specifies the bit position of the tag concerned. When this button is touched, the selected tag will be set to the value defined in the ON field and the button in the ON state will look like the one defined in the preview field.

When used in conjunction with the Set two Bit Masks ON/OFF function, this field specifies the bit position at which the button is shown in the On state according to the preview. When this button is in the ON state, the tag will be set to the value defined in the ON fields and in the OFF state will return to the value set in the OFF fields.

10.5 Flag Display

10.5.1 Flag Display



Button

Tag: guestroom.light

Address:

Style: Bitmap | 2D Frame

□ Delay

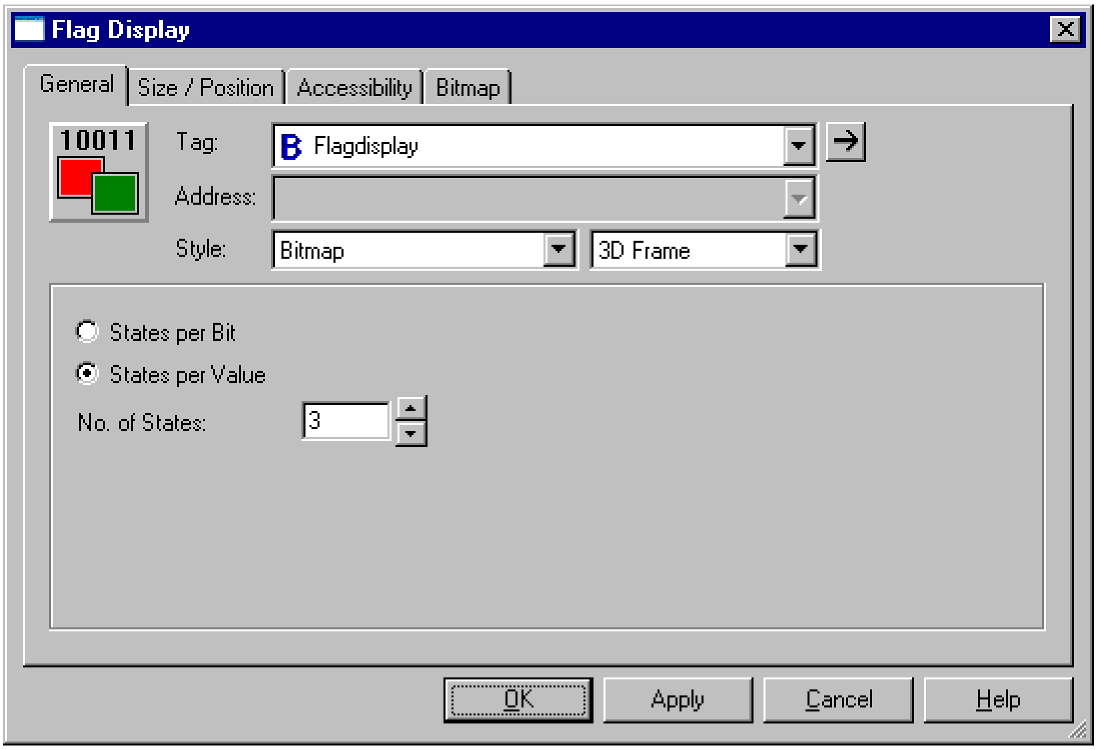
□ Double Click

● SET Bit

○ DEL Bit

□ Stream

Bit: 0



Flag Display

Tag: Flagdisplay

Address:

Style: Bitmap | 3D Frame

○ States per Bit

● States per Value

No. of States: 3

With this object a picture, color or text can be displayed on the MMI for every bit (States per Bit) or for every tag value (States per Value) .

Tag

List of all existing tags of type BIT, BYTE, WORD, DWORD. The data direction must be MMI-PLC. One of these tags can be selected for the object.

Button ⇥

Clicking this button will call up the Definition of Tags dialog immediately.

Address

This field shows the PLC address of the selected Tag.

If a Panel Type with several communications cards is used and the data block for this tag is sent to both PLCs, both addresses will be displayed. The addresses start with "0=" for the communications card in slot 0 and "1=" for the communications card in slot 1.

See also Definition of Tags

3D Frame, 2D Frame, No Frame, Delay, Double Click

See description Touch zone frames and attributes

Style

This setting is used to define the basic appearance of the object.

- Text
  The button can be assigned a text which is selected and defined on the Text panel. A text can be defined with a different color, font and font size for every state (ON/OFF).
- Color
  This button is also shown as a colored area. The color can be selected from the Color Selection dialog that appears. No text is displayed.
- Bitmap
  This button shows a picture. The pictures are selected on the Bitmap panel.

States per Bit

With this setting each bit of the tag represents a different state. A BYTE tag therefore has up to 9 states (one state no bit set, and one state for each additional set bit).

The number of states can be set via the No. of States field.

If more than one bit is set within the tag, the least significant bit determines the state.

States per Value

With this setting each tag value represents a different state. A BYTE tag therefore has up to 256 states.

The number of states can be set via the No. of States field.

No. of States

This entry field is used to define the number of states used. The maximum number possible depends on the type of tag selected. The absolute maximum is 10,000 states.

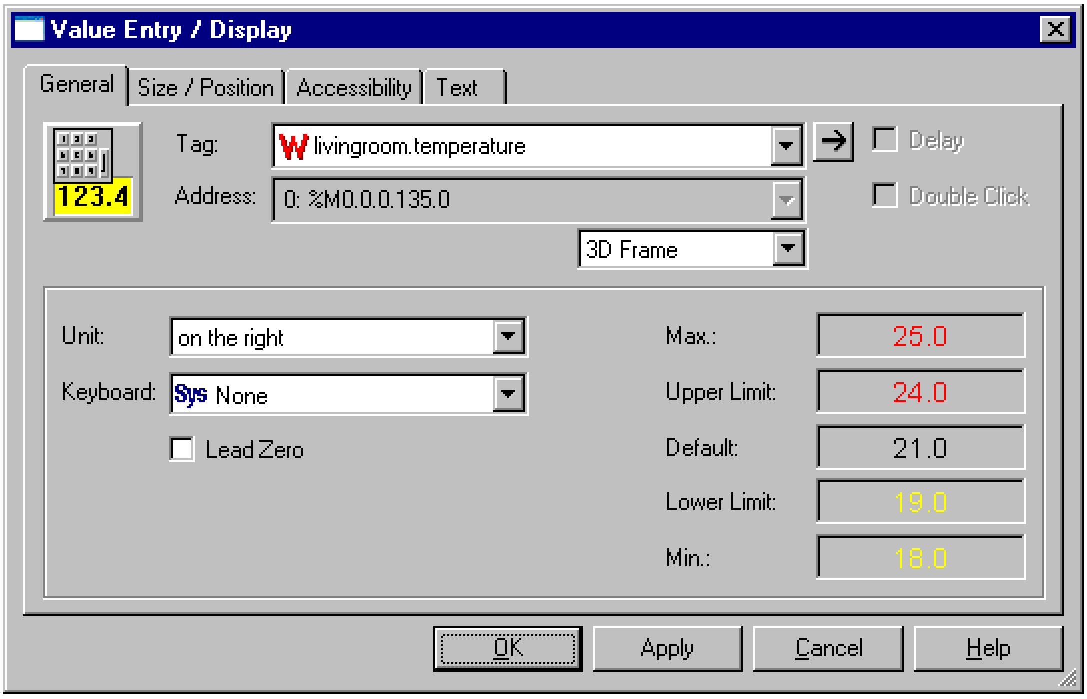
10.6 Value Display

10.6.1 Value Display

A value display can be configured with the Value Entry / Display object without a keyboard.

10.7 Value Entry / Display

10.7.1 Value Entry / Display



Tag: livingroom.temperature

Address: 0: %M0.0.0.135.0

□ Delay

□ Double Click

3D Frame

Unit: on the right

Keyboard: Sys None

□ Lead Zero

Max.: 25.0

Upper Limit: 24.0

Default: 21.0

Lower Limit: 19.0

Min.: 18.0

Note:
The only difference between the value entry and the value display is that a keyboard is defined with value entry.

This object is used to enter or display a tag of type BYTE, WORD, DWORD or FLOAT as a numeric value on the MMI. The data direction must be MMI->PLC or MMI-PLC. The entries can change color if the value is outside of a defined range.

The font, font size and alignment can be set on the Disable Style with 'not accessible" panel.

The entry range is limited by the Maximum and Minimum values.

Note:
All values that are changed with a system keyboard must be entered in decimal format irrespective of the set display format (decimal, hex, binary, octal, BCD).
A user-defined keyboard can, however, be configured for entering HEX values in HEX format.

Tag

List of all existing tags of type BIT, BYTE, WORD, DWORD, FLOAT. One of these tags can be selected for the object.

Button →

Clicking this button will call up the Definition of Tags dialog immediately.

Address

This field shows the PLC address of the selected Tag.

If a Panel Type with several communications cards is used and the data block for this tag is sent to both PLCs, both addresses will be displayed. The addresses start with "0=" for the communications card in slot 0 and "1=" for the communications card in slot 1.

See also Definition of Tags

3D Frame, 2D Frame, No Frame, Delay, Double Click

See description Touch zone frames and attributes

Unit

A unit of measure can be assigned to every value tag. This list is used to define whether this is also to be displayed. The following options are possible:

- Display no unit of measure
- Display unit of measure to the right of the value (value and unit of measure are separated by a space)
- Display unit of measure above the value (2 lines)

Keyboard

List of available keyboards to enter a value. One of these keyboards can be selected.

If Select is used, the value can be adjusted with a Function Key using a function from the group Keyboards or Character Entry. The setting is also retained when the MMI is switched off.

Lead Zero

If this check box is activated, the value is always shown in its maximum width. If the value is less than the maximum value, leading zeros (0) will be shown.

Example of a tag with 6 Digits:

Without zeros	:	12.00 m/min
With zeros	:	0012.00 m/min

The maximum width depends on the defined number of Digits .

Maximum

This field shows the maximum MMI value. The value is calculated from the maximum PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The colors for this value range can be defined on the Color/Font panel (>= Upper Limit). The color defined in Default color and font is used as the default color.

If a value is entered on the MMI that exceeds the maximum, it is automatically changed to the maximum value when pressing ENTER and the keyboard is not closed.

Upper Limit

This field shows the upper limit of the MMI value. The value is calculated from the upper PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The upper limit determines the value at which the display can change color, font size and font if the value exceeds it.

The colors for this value range can be set on the Color/Font panel (>= upper limit). The color defined in Default color and font is used as the default color.

Default

This field shows the default MMI value. The value is calculated from the default PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The preset value is only effective if the MMI is operating offline (no PLC connected) or the tag is not addressed.

The value is displayed in the color, font size and font if the value is between the upper and lower limits.

The colors for this value range can be set on the Color/Font panel. The color defined in Default color and font is used as the default color.

Lower Limit

This field shows the lower limit of the MMI value. The value is calculated from the limit of the PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The lower limit determines the value at which the display can change color, font size and font if the value is below it.

The colors for this value range can be set on the Color/Font panel (<= Lower Limit). The color defined in Default color and font is used as the default color.

Minimum

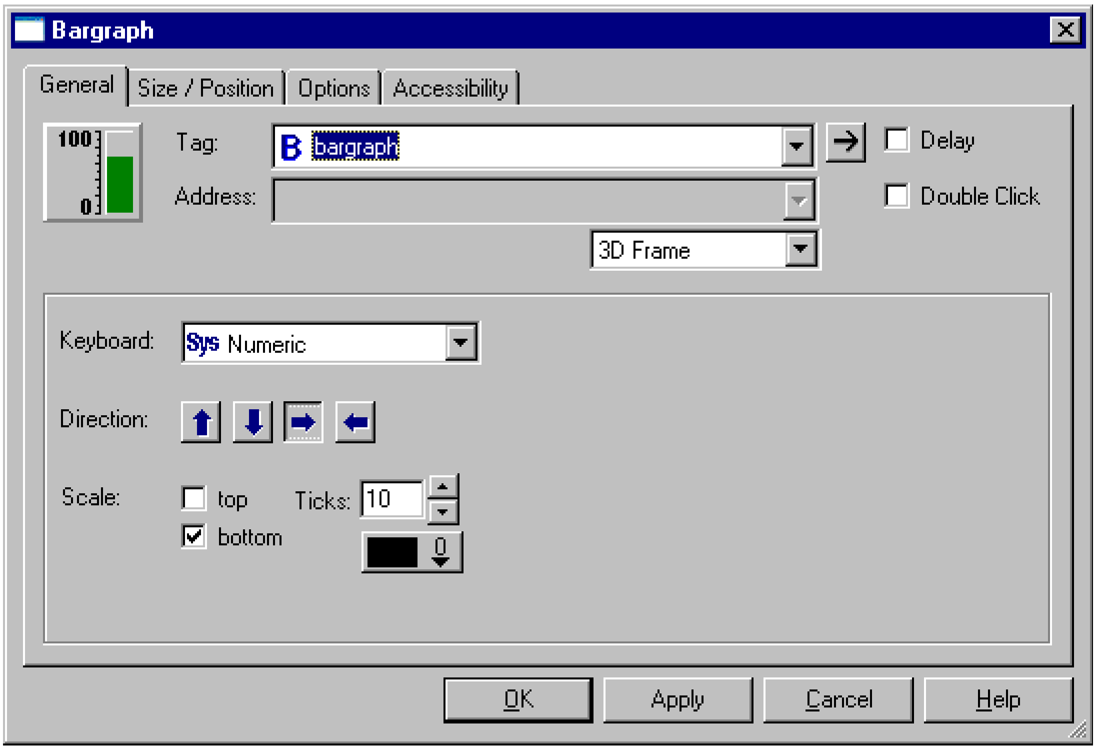
This field shows the minimum MMI value. The value is calculated from the minimum PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The colors for this value range can be defined on the Color/Font panel (<= Lower Limit). The color defined in Default color and font is used as the default color.

If a value is entered on the MMI that is below the minimum, it is automatically changed to the minimum value when pressing ENTER and the keyboard is not closed.

10.8 Bargraph

10.8.1 Bargraph



This object enables a value tag (BYTE, WORD, DWORD, FLOAT) to be shown as a bargraph. The bargraph has three color ranges (>= Upper Limit, In Range, <= Lower Limit).

See also Bargraph Options, Maximum (Tag Value), Upper Limit, In Range, Lower Limit, Minimum (Tag Value)

Whether the object is a touch zone or not is defined with the Keyboard setting. If no keyboard is selected, the object is automatically a display.

Tag

List of all existing tags of type BIT, BYTE, WORD, DWORD, FLOAT. One of these tags can be selected for the object.

Button →

Clicking this button will call up the Defining Tags dialog immediately.

Address

This field shows the PLC address of the selected Tag.

If a Panel Type with several communications cards is used and the tag is sent to both PLCs, both addresses will be displayed. The addresses start with "0=" for the communications card in slot 0 and "1=" for the communications card in slot 1.

3D Frame, 2D Frame, No Frame

See description Touch zone frames and attributes

Delay, Double Click

See description Touch zone frames and attributes

This attribute is only available for objects without a keyboard (= Display).

Keyboard

List of available keyboards to enter a value. One of these keyboards can be selected.

If Select is used, the value can be adjusted with a Function Key from the group Keyboards or Character Entry. The setting is also retained when the MMI is switched off.

As soon as a keyboard is selected, the object becomes a touch zone. If no keyboard is selected, the object is a display without a touch zone.

Direction

Use the arrow buttons to define the display direction of a bar. This settings will also determine the Top/Bottom inscription setting for the Scale element for horizontal bars or the Left/Right setting for vertical bars.

Scale

The Top/Bottom and Left/Right check boxes define whether a scale is to be displayed or not. If the scaling is to be shown the width of the bar is reduced by around 18 pixels since the scale must always have enough space within an object.

The scale is made up of measurement ticks and does not contain any text or displayed unit of measurement. If text is required, this must be created using static objects of type Text.

Ticks

The Ticks setting defines the number of divisions in the scale.

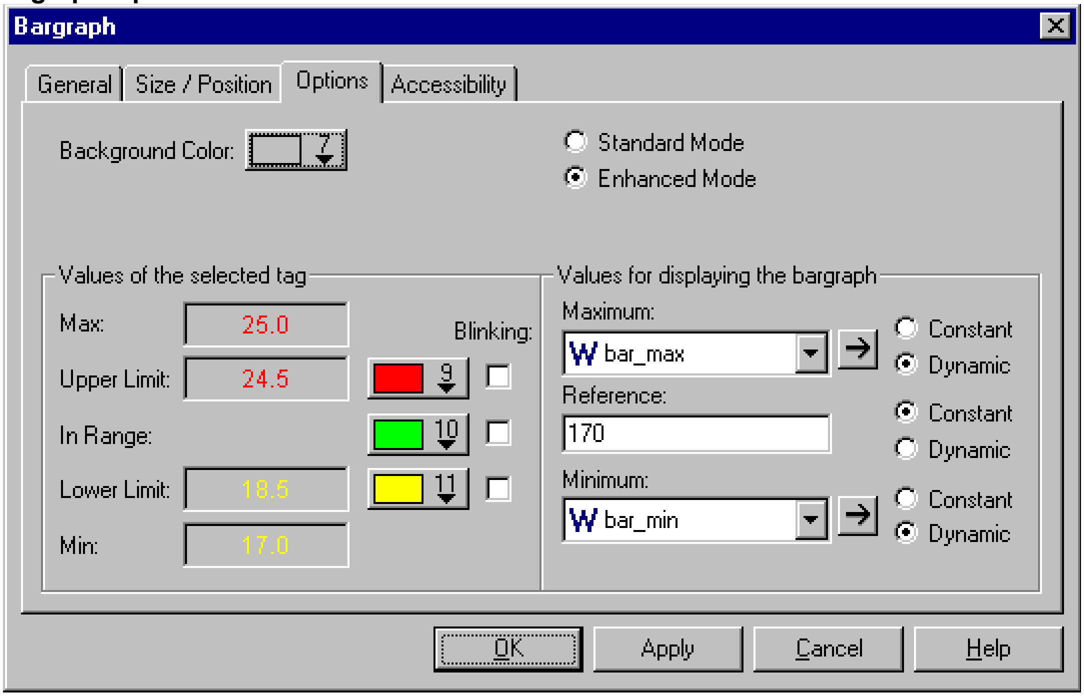
Note:

For example, a 10"s scale (Tick setting 10) for the display 0..100% consists of 11 measurement ticks since the tick for the base line is not included.

The color of the scale can be set with the selection list box to the right of Ticks.

10.8.2 Bargraph Options

Bargraph Options



Background Color: 7

○ Standard Mode
● Enhanced Mode

Values of the selected tag

		Blinking:	
Max:	25.0		
Upper Limit:	24.5	🟥 9	□
In Range:		🟩 10	□
Lower Limit:	18.5	🟨 11	□
Min:	17.0		

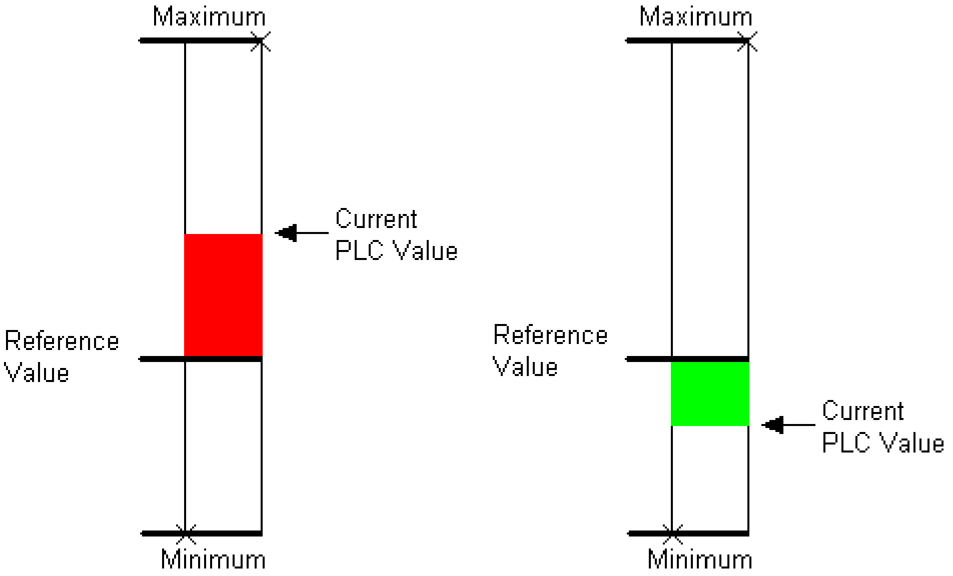
Values for displaying the bargraph

Maximum: bar_max ○ Constant ● Dynamic

Reference: 170 ● Constant ○ Dynamic

Minimum: bar_min ○ Constant ● Dynamic

This panel is used for setting the limit values and the colors assigned to them. The following describes the interrelationships between Maximum (Limit Value), Reference Value and Minimum (Limit Value). The limit value settings can only be carried out when Enhanced Mode has been set.



Standard Mode

Bargraph displays cannot be modified in Standard mode, i.e. the limit values are transferred from the selected bargraph Tag. The reference value is the same as the minimum value.

See also Enhanced Mode

Enhanced Mode

Enhanced mode allows you to set the bargraph limit values. They can be set as constant values, or as dynamic values using tags.

The limit value settings are made in the Constant / Dynamic, Maximum (Limit Value), Reference Value, Minimum (Limit Value) fields.

See also Standard Mode

Background Color

This list can be used to define the background color if a scale is used.

Blinking

Depending on the value range concerned, the bargraph can be displayed blinking as required. The blinking effect is caused by inverting the color.

Maximum (Tag Value)

This field shows the maximum MMI value. The value is calculated from the maximum PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The colors for this value range can be defined on the Color/Font panel (>= Upper Limit). The color defined in Default color and font is used as the default color.

If a value is entered on the MMI that exceeds the maximum, it is automatically changed to the maximum value when pressing ENTER and the keyboard is not closed.

Upper Limit

This field shows the upper limit of the MMI value. The value is calculated from the upper limit of the PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The upper limit determines the value at which the display can change color, font size and font if the value exceeds it.

The colors for this value range can be set on the Color/Font panel (>= upper limit). The color defined in Default color and font is used as the default color.

In Range

The bar is shown in this color if the value is between the upper and lower limits. The color defined in Default color and font is used as the default color.

Lower Limit

This field shows the lower limit of the MMI value. The value is calculated from the limit of the PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The lower limit determines the value at which the display can change color, font size and font if the value is below it.

The colors for this value range can be set on the Color/Font panel (<= Lower Limit). The color defined in Default color and font is used as the default color.

Minimum (Tag Value)

This field shows the minimum MMI value. The value is calculated from the minimum PLC value and the counting conversion factor (see also Limits and Units of Measurement and Conversion Factors).

The colors for this value range can be defined on the Color/Font panel (<= Lower Limit). The color defined in Default color and font is used as the default color.

If a value is entered on the MMI that is below the minimum, it is automatically changed to the minimum value when pressing ENTER and the keyboard is not closed.

Constant / Dynamic

The **Constant** setting allows fixed and the **Dynamic** setting variable limit values to be set. This enables limit values to be modified during operation. The limit values and reference value are set via the Maximum (Limit Value), Reference Value, Minimum (Limit Value) fields.

Button ⇥

Clicking this button will call up the Defining Tags dialog immediately. This button is only visible if a dynamic limit value (Constant / Dynamic setting) is used.

Maximum (Limit Value)

This field is an entry field when a fixed limit value is selected, and a drop-down list box for tag selection when a dynamic limit value has been selected.

The maximum value defines the tag value at which the full bar should be displayed.

See also Constant / Dynamic, Reference Value, Minimum (Limit Value)

Reference Value

This field is an entry field when a fixed limit value is selected, and a drop-down list box for tag selection when a dynamic limit value has been selected.

The reference value defines the zero point of the display. If the tag value is the same as the reference value, no bar is displayed.

See also Constant / Dynamic, Maximum (Limit Value), Minimum (Limit Value)

Minimum (Limit Value)

This field is an entry field when a fixed limit value is selected, and a drop-down list box for tag selection when a dynamic limit value has been selected.

The minimum value defines the tag value at which no bar should be displayed.

See also Constant / Dynamic, Maximum (Limit Value), Reference Value

10.9 Graph

10.9.1 Graph

The graph object is used for displaying values graphically. All BIT and VALUE tags can be displayed graphically within the graph object. How to assign tags is described in Graph Definitions.

If plotting was started when the MMI was switched off, plotting will be automatically restarted the next time the MMI is switched on.

A maximum of 100 graph objects is possible per project. Up to 32 different tag values can be shown per graph object, i.e. the maximum permissible number of curves is 32.

Graph blocks can be used in Standard or Enhanced mode. The differences between the two modes are described in the section Define Graph Blocks under Differences between Standard and Enhanced Graph Blocks.

10.9.2 Standard Mode

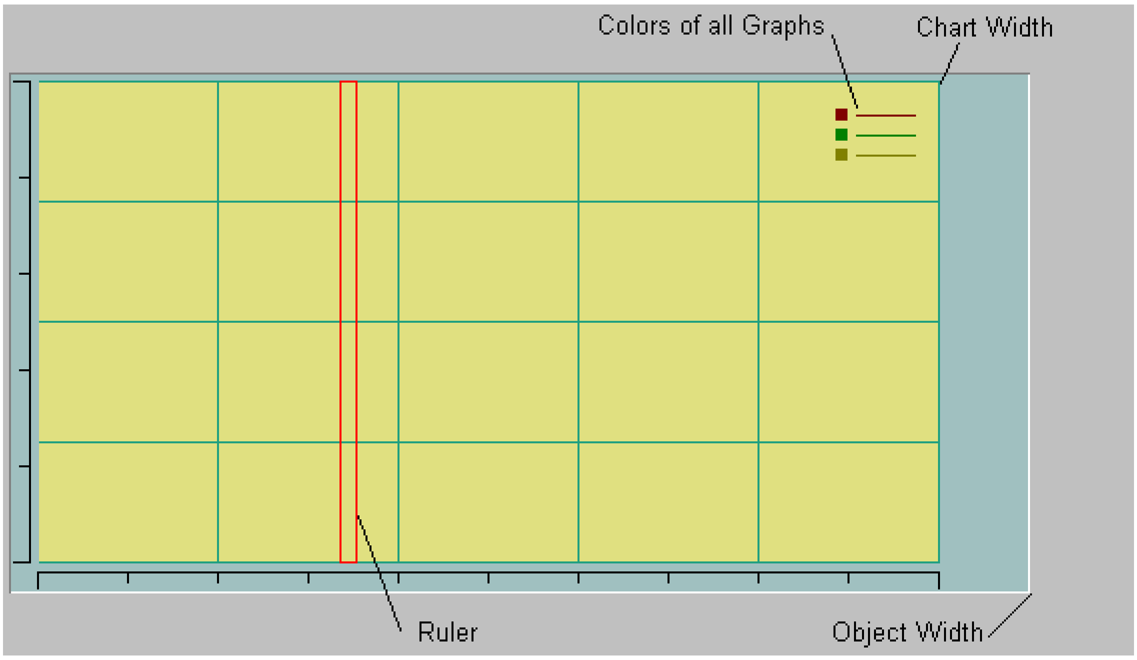
The window height always represents 100% of the maximum tag value. The limit values of tags with dynamic limits are the values of the dynamic limit tags for Minimum and Maximum.

See also Limits, Dynamic Limits and Units of Measurement and Conversion Factors

The maximum window width and maximum number of measuring points (no. of measures) is limited by the object width, i.e. with an X resolution of 640, a maximum number of 640 measuring points is possible. Even if the graph block contains more than this number of measured values, only 640 of the most recent measured values can be displayed.

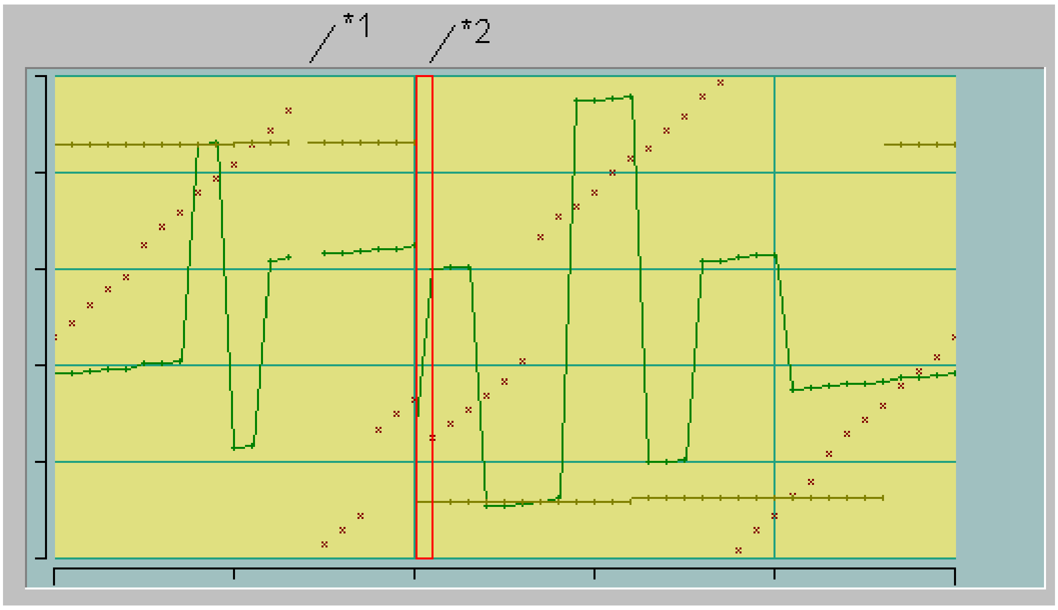
The tag values of graph blocks are cleared when the MMI is switched off. Selecting the Reset Archive option causes the values to be cleared when the plotting of the graph block is started (see Start/Stop Graph 0..99).

The figure below shows a typical Galileo graph object:



The colors of all defined curves are shown in the "Color of all Graphs" legend. This legend only appears inside the Galileo design software but not in the GRS runtime program.

The graph displayed on the MMI looks as follows:



* 1 If the curve plot is stopped and then resumed a break in the measuring point will be shown after every Start/Stop.
See also Start/Stop Graph 0..99 and Starting / Stopping Settings

* 2 The measured values left of the ruler are the most current data values. The ruler indicates the current plotting position. As soon as the plot reaches the right of the window, the plot will be continued on the left. In this way the oldest tag values are overwritten with the newest values.

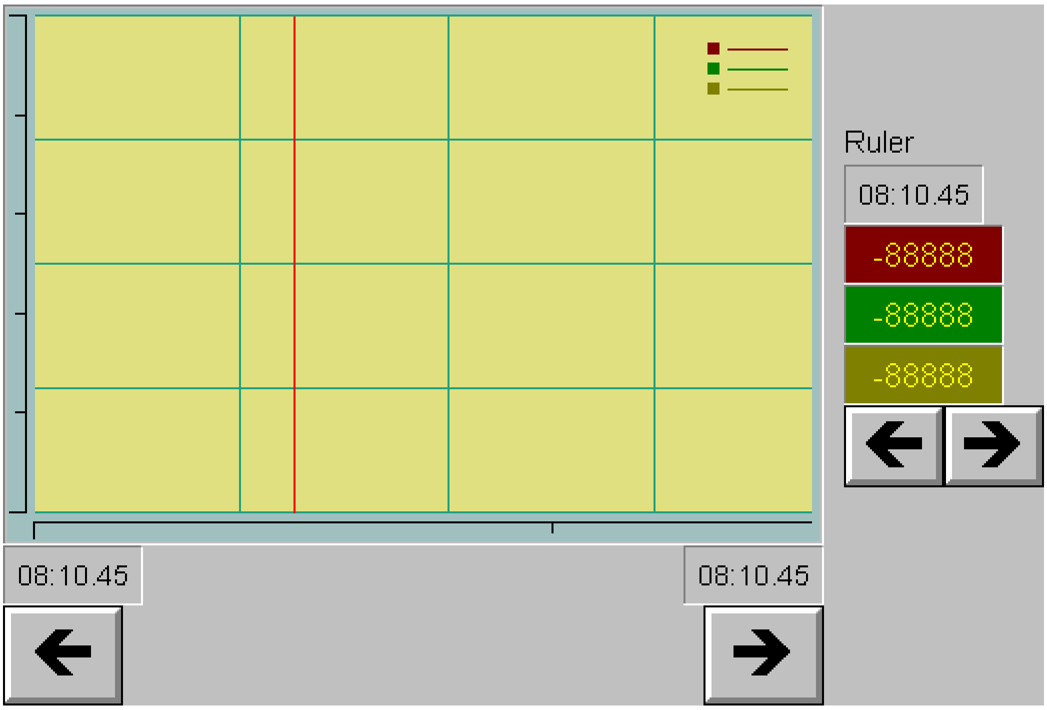
10.9.3 Enhanced Mode

Enhanced mode features additional functions for selection. These are as follows:

- The visible range can be moved within the data plotted in the graph block.
  See Scroll Left, Scroll Right
- The start and finish time of the currently displayed measured values can be displayed. See Display Time Graph Start and Display Time Graph End
- Ruler for displaying the measured values of the different curves at any point in the data buffer
  See Ruler Settings
- Zoom settings: The visible range can be expanded or compressed in the X and Y axes (see the chapters X Axis and Y Axis)
- With certain device types the measured values of graph blocks can be saved in a (*.GDB) file. These files can be loaded and saved as required.

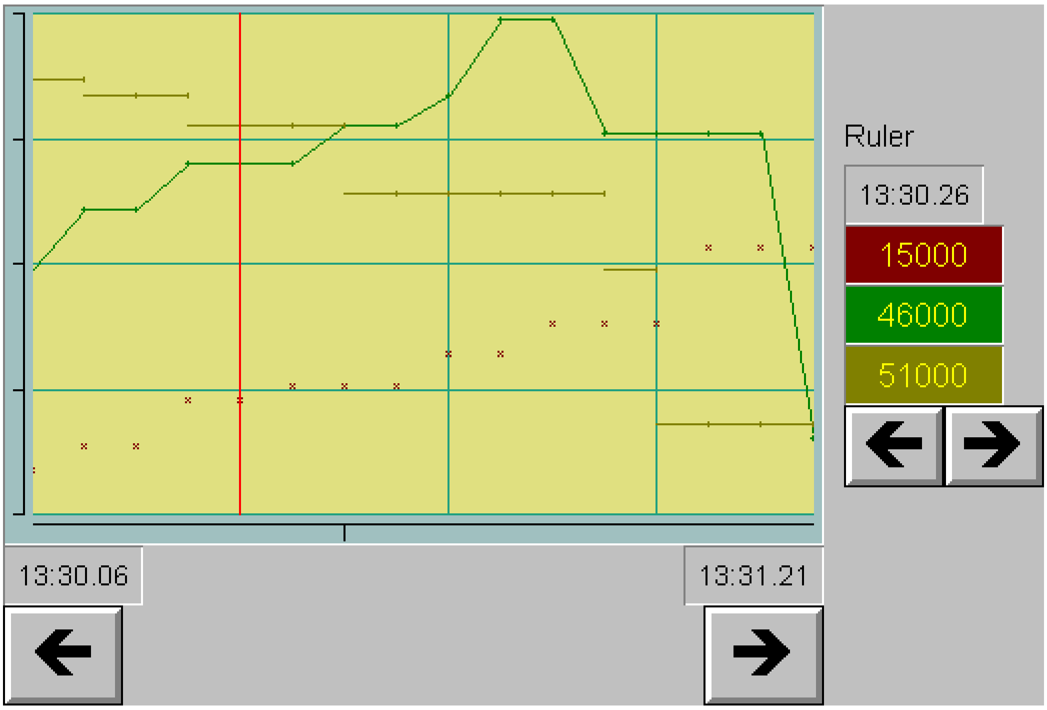
The differences between Standard and Enhanced mode are listed in the section Differences between Standard and Enhanced Graph Blocks .

The figure below shows a typical Galileo graph object:



The colors of all defined curves are shown in the "Color of all Graphs" legend. This legend only appears inside the Galileo design software but not in the GRS runtime program.

The graph displayed on the MMI looks as follows:



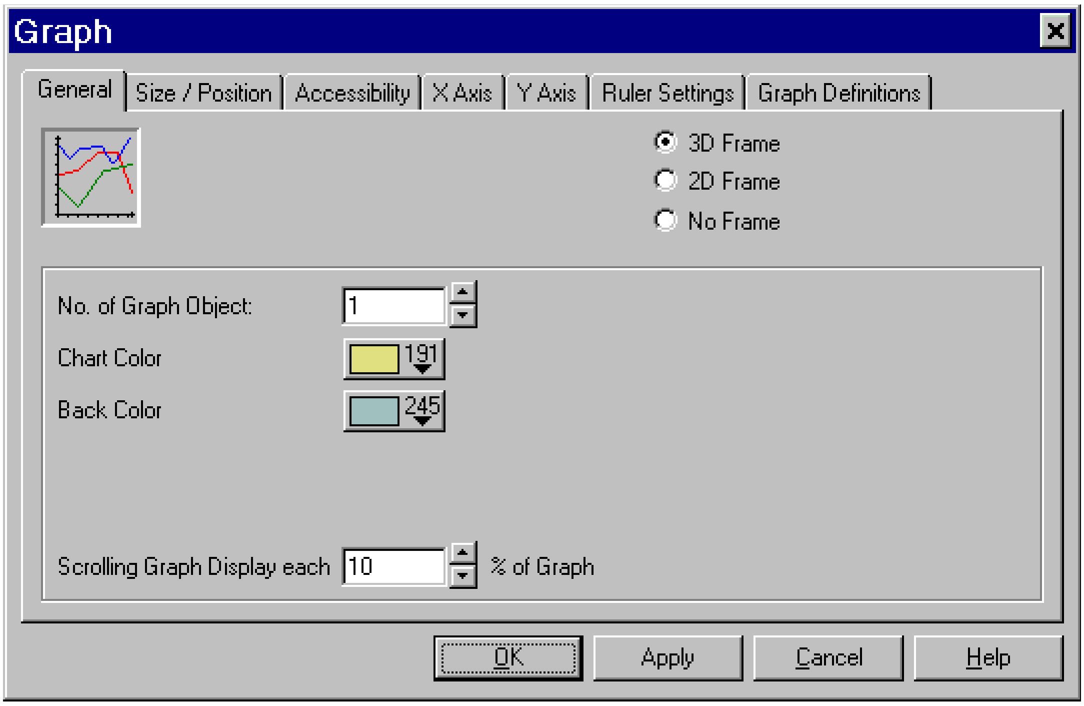
The following objects are contained in the mask section shown above:

- Graph object
- Special functions Scroll Left and Scroll Right for selecting displayable measured values within the range of all measured values
- Special functions Display Time Graph Start and Display Time Graph End for displaying start and end times of the displayed measured values

- Special functions Scroll Left (Ruler) , Scroll Right (Ruler) and Display Time Graph Ruler for positioning the time display of the ruler
- The three Value Display objects display the curve values at the position of the ruler (see also Curve Values at the Ruler Position)

10.9.4 General

General



● 3D Frame
○ 2D Frame
○ No Frame

No. of Graph Object: 1

Chart Color 191

Back Color 245

Scrolling Graph Display each 10 % of Graph

3D Frame, 2D Frame, No Frame

See description Touch zone frames and attributes

No. of Graph Object

Each graph object is identified by an object number.

This object number is currently not in use.

Chart Color

Chart color of the object.

A chart is the area in which the curves are shown.

Back Color

Background color of the object.

Scrolling Graph Display each n % of Graph

This setting defines after how many % of the display the entire diagram is to be refreshed respectively the curve values are to be moved. This saves the need of the graph being refreshed frequently, and prevents any disturbing effects that may otherwise result if a low scan rate has been set.

Note:
This setting is only functional if the plotting of the graph block has started and the current measured value is in the display.

The following example describes the effects of this setting:

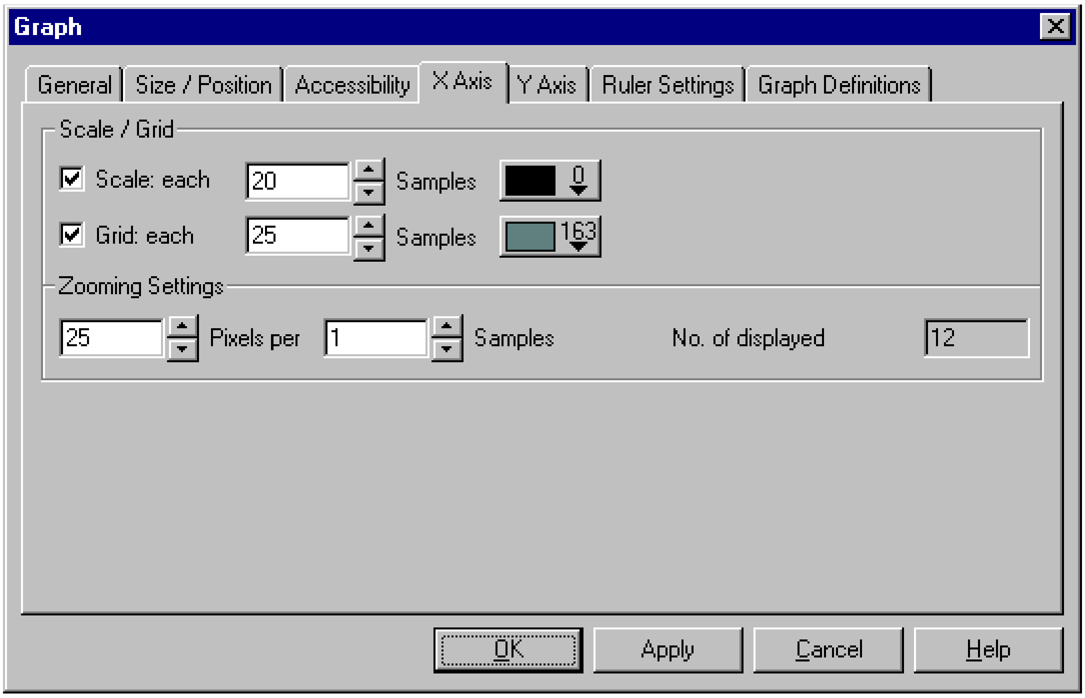
n = 1 %:
The graph is scrolled to the left after each measured value. That means the oldest measured value on the left is deleted and the graph is scrolled to the left and the new measured value is plotted. This process will be repeated with every measured value.

n = 10 %:
As soon as the currently measured value is plotted at the right in the display, the display is scrolled to the left 10% of the display. The next measured values are then plotted without the graph being scrolled. The process will be repeated as soon as the currently measured value is plotted at the right in the display.

See also Start/Stop Autoscroll, No. of Samples, Time Span

10.9.5 X Axis

X Axis



Scale / Grid

☑ Scale: each 20 Samples 0

☑ Grid: each 25 Samples 163

Zooming Settings

25 Pixels per 1 Samples No. of displayed 12

This panel is used for setting the X axis of the graph display.

See also Y Axis

Scale

Select this option to display an X scale. A graduation will be shown in the defined color at intervals defined by the number of measuring points. Zooming Settings is used to set the ratio between pixels and measured values.

The maximum number of measured values to scale graduation is restricted to half of all measured values of the graph block (see No. of Samples).

Note:
As soon as the gap between two scale graduations is less than 20 pixels due to the Zoom settings, the MMI runtime program will only show every second scale graduation.

Grid

Select this option to draw an X grid (horizontal lines). A grid line will be shown in the defined color at intervals defined by the number of measuring points. Zooming Settings is used to set the ratio between pixels and measured values.

The maximum number of measured values to grid is restricted to half of all measured values of the graph block (see No. of Samples)) .

Note:
As soon as the gap between two grid lines is less than 20 pixels due to the Zoom settings, the MMI runtime program will only show every second grid line.

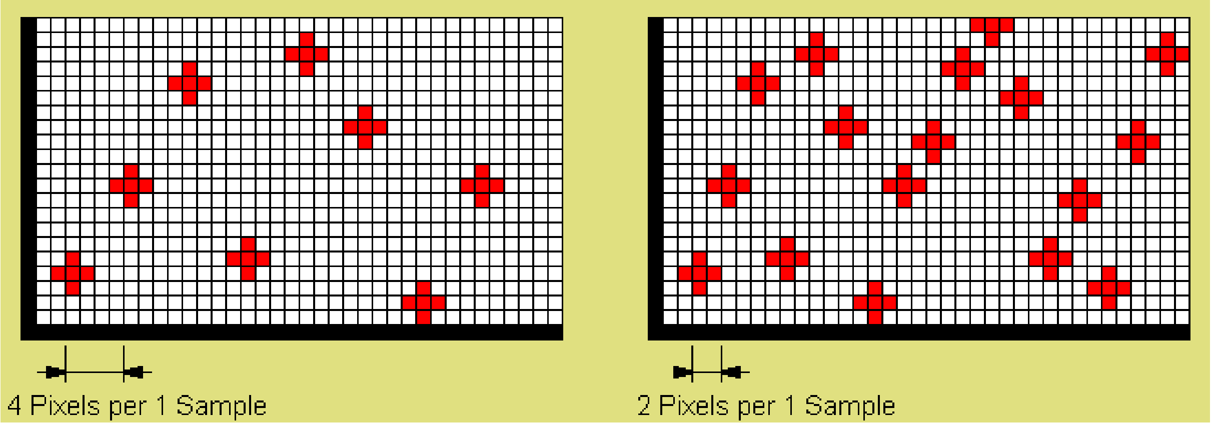
Zooming Settings

The Zoom settings are used to set the ratio between pixels and measured values. This setting enables the X axis of the measured values to be expanded or compressed. The Zoom settings for the Y axis are carried out on the Y Axis panel.

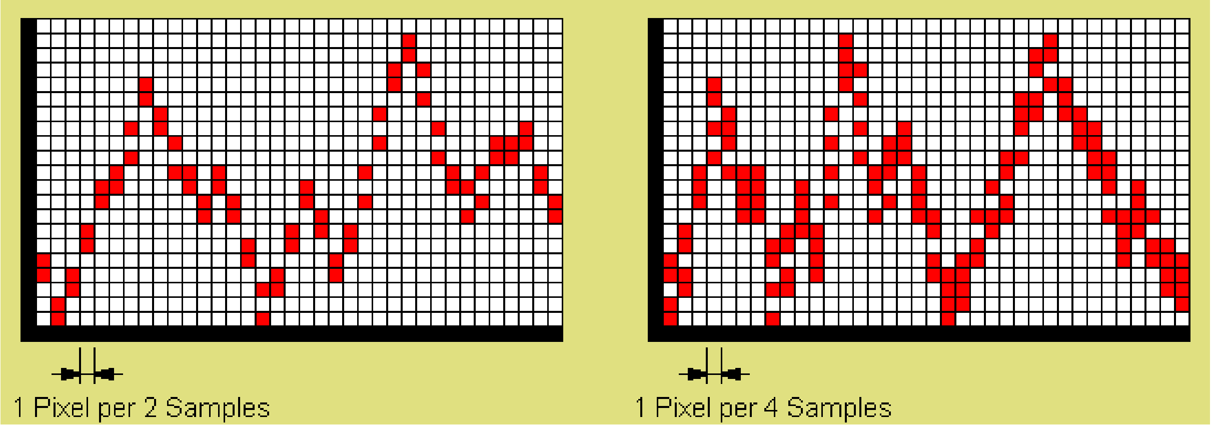
These settings are used when starting the runtime program. The Zoom settings can be carried out directly on the device if required using the special functions Zoom In and Zoom Out.

The "**No. of displayed Samples**" field displays how many measured values are visible within the graph object with the current Zoom settings.

The two figures show an enlarged section of a graph object with different Zoom settings:



Each square corresponds to a pixel, and a single measured value is represented by a cross. In the figure on the left every 4 pixels show one measured value, and in the figure on the right every 2 pixels. The individual measured values are represented by (red) crosses.



This figure shows two graph objects in which more than 2 measured values per pixel (left 2 and right 4 measured values per pixel) are displayed. Each measured value is represented by a (red) point.

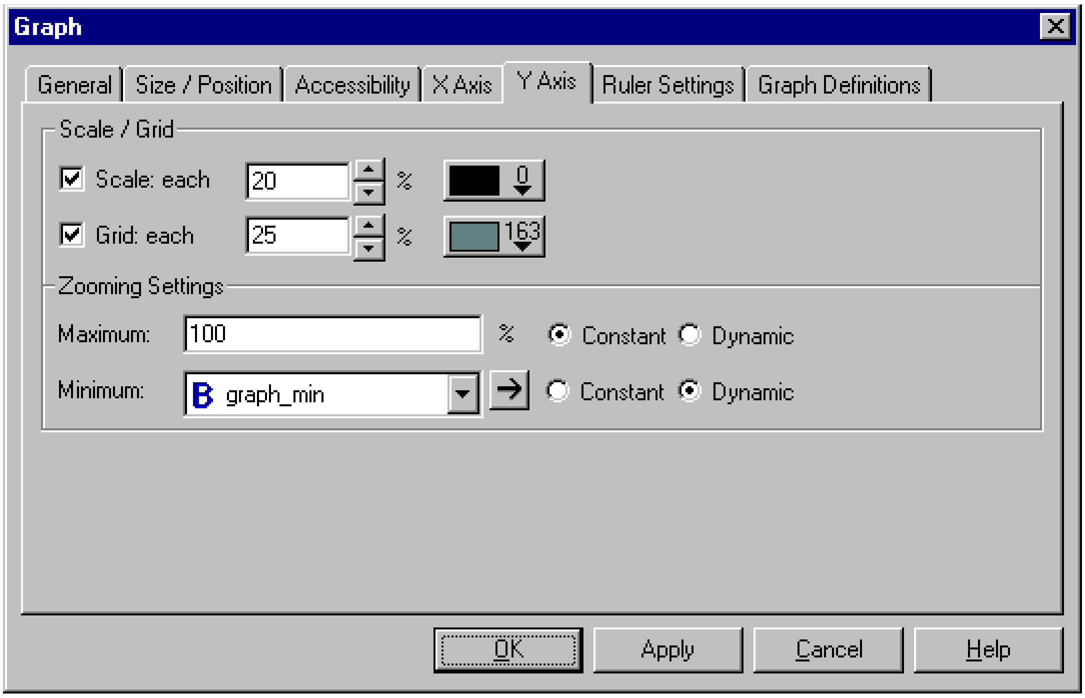
The maximum number of pixels is restricted to half the width of the graph object window concerned. The maximum number of measured values to pixel is restricted to the total number of all measured values of the graph block (see No. of Samples) divided by the width of the graph object window.

Note:
In Standard mode (see Mode Settings) the number of measured values per pixel in graph objects cannot be modified.

See also Zooming Settings of the Y Axis

10.9.6 Y Axis

Y Axis



Scale / Grid

☑ Scale: each 20 % 0

☑ Grid: each 25 % 163

Zooming Settings

Maximum: 100 % ● Constant ○ Dynamic

Minimum: B graph_min ○ Constant ● Dynamic

This panel is used for setting the Y axis of the graph display. The Zoom settings can only be carried out if a Graph Block is used in Enhanced mode (see Mode Settings) .

See also X Axis

Scale

Select this option to display a Y scale. A graduation will be shown in the defined color at intervals defined by the percentage value. The total height of the Y scale is 100%.

Entries from 0 to 100% are valid.

Note:
As soon as the gap between two scale graduations is less than 20 pixels due to the Zoom settings, the MMI runtime program will only show every second scale graduation.

Grid

Select this option to draw a Y grid (vertical lines). A grid line will be shown in the defined color at intervals defined by the percent value. The total height is 100%.

Entries from 0 to 100% are valid.

Note:
As soon as the gap between two grid lines is less than 20 pixels due to the Zoom settings, the MMI runtime program will only show every second grid line.

Zooming Settings

The Zoom settings can be used to extend the Y axis of the graph display. Constant or dynamic values can be selected. Dynamic values allow the visible range to be modified online on the device. The entire range is visible if the Minimum is set to 0 % and Maximum to 100%.

Constant:
Entries from 0 to 100% are valid. The Zoom values can no longer be modified on the device itself.

Dynamic:
Tags are selected as limit values so that Zoom settings on the device can be modified online. The visible range is set according to the percentages given in the Minimum and Maximum tags. The selected tags should only accept tags between 0 and 100. If Minimum is less than 0, it is set to 0% and if Maximum is higher than 100, it is set to 100%. In this way all Zoom settings can be modified by changing the tag values.

The percentage value entry and the tag selection are made in the Zooming Settings and Zooming Settings fields.

See also Zooming Settings of the Y Axis

Button →
Clicking this button will call up the Defining Tags dialog immediately. These buttons are only visible if the limit value concerned is set to **Dynamic**.

See Zooming Settings

Maximum
This field is an entry field when a fixed limit value is selected, and a drop-down list box for tag selection when a dynamic limit value has been selected.

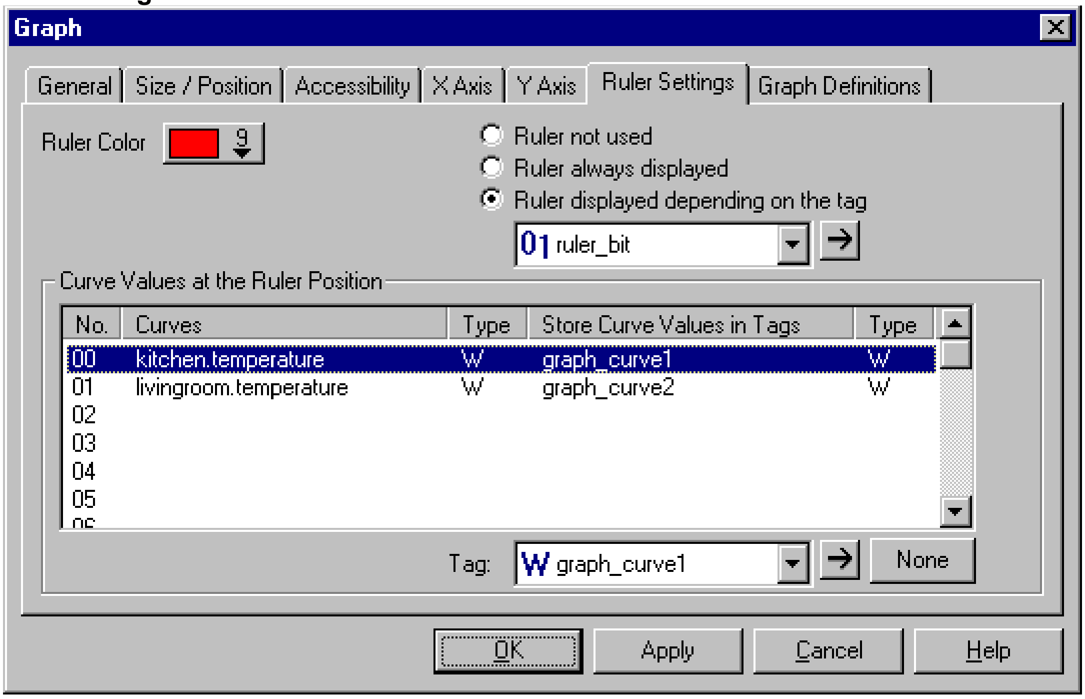
The percentage value defines the maximum value that can be shown within the graph.

Minimum
This field is an entry field when a fixed limit value is selected, and a drop-down list box for tag selection when a dynamic limit value has been selected.

The percentage value defines the minimum value that can be shown within the graph.

10.9.7 Ruler Settings

Ruler Settings



Ruler Color 9

○ Ruler not used
○ Ruler always displayed
● Ruler displayed depending on the tag

01 ruler_bit

Curve Values at the Ruler Position

No.	Curves	Type	Store Curve Values in Tags	Type
00	kitchen.temperature	W	graph_curve1	W
01	livingroom.temperature	W	graph_curve2	W
02				
03				
04				
05				

Tag: W graph_curve1 None

The ruler has different functions depending on the graph block mode used.

See also Mode Settings of the Graph Block

Standard Mode
The ruler shows the position of the most current tag values. Only the color of the ruler can be changed. The width of the ruler is defined by the number pixels entered in the **Pixel** field (see Zooming Settings of the X Axis) .

Enhanced Mode
The ruler is used to interpret the measured value data in the archive. This special function allows the position of the ruler to be moved inside the archive data (Scroll functions). The special function Display Time Graph Ruler is used to display the time/date of the current ruler position. The values of the individual curves at the ruler position can be saved in bit or value tags (see Curve Values at the Ruler Position). These tag values can, for example, be displayed with Value Display objects in the mask.

The ruler width is always one pixel.

See also Scroll Left (Ruler), Scroll Left 1 (Ruler), Scroll Right (Ruler) , Scroll Right 1 (Ruler) , Scroll to Start (Ruler), Scroll to End (Ruler)

Ruler Color

Color of the ruler

Ruler not used

The ruler is not used.

Ruler always displayed

The ruler is always displayed.

Ruler displayed depending on the Tag x

The ruler can be displayed or hidden depending on a tag value. The ruler is not displayed if the bit tag = 0, and displayed if the bit tag = 1. The bit tag can be modified, for example, via the Button object.

Button →

Clicking this button will call up the Defining Tags dialog immediately. This button is only visible if the Ruler displayed depending on the Tag x attribute is selected.

Curve Values at the Ruler Position

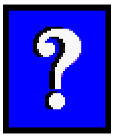
These settings allow the measured values at the position of the ruler to be saved in tags.

Curves

This list contains the allocation of the different curves to the individual tags. To change the settings, select a line and make a selection via the Tag drop-down list box.

Tag

This drop-down list box is used to assign a tag to the selected curve. This tag contains the curve value from the data archive at the position of the ruler. If this value is not defined because, for example, the data archive does not contain any measured values yet, the tag value is represented by the following bitmap within the object (e.g. Button, Flag Display, Value Display, Bargraph, etc.) field:

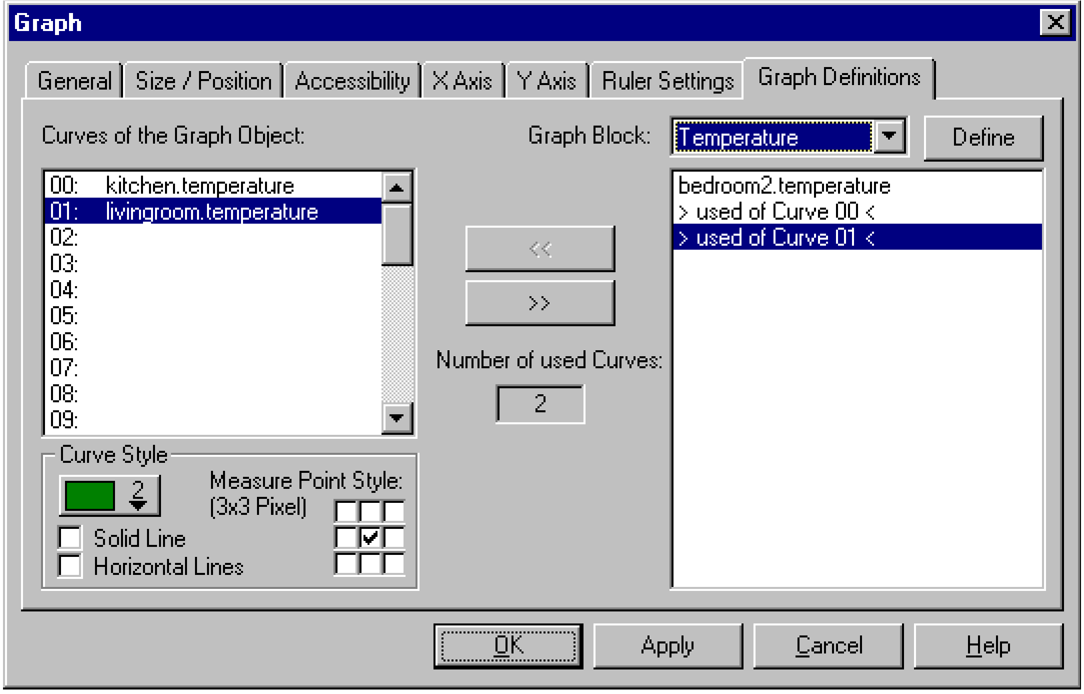


None

Click this button to delete the assignment of the tag to the selected curve.

10.9.8 Graph Definitions

Graph Definitions



Graph

General | Size / Position | Accessibility | X Axis | Y Axis | Ruler Settings | Graph Definitions

Curves of the Graph Object:

00: kitchen.temperature
01: livingroom.temperature
02:
03:
04:
05:
06:
07:
08:
09:

Graph Block: Temperature

bedroom2.temperature
> used of Curve 00 <
> used of Curve 01 <

Number of used Curves: 2

Curve Style

Measure Point Style: (3x3 Pixel)

□ Solid Line

□ Horizontal Lines

Graph Block

Display the currently selected data block for this graph object

List of all graph blocks defined within the project.

See also Graph Start/Stop Functions, Graph Start/Stop Functions

Define

Calls the dialog Define Graph Blocks

Curves of the Graph Object

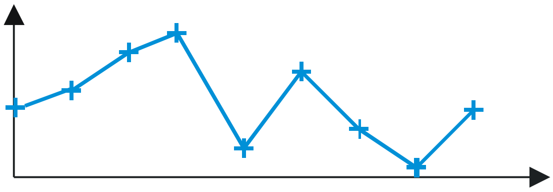
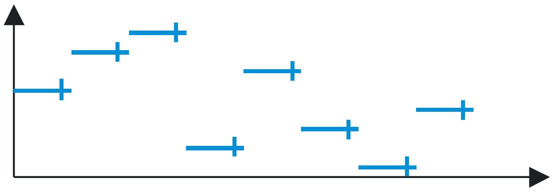
The list contains all the tags assigned to the selected graph block. A tag can be assigned to each curve number. The maximum number of curves is 32.

The settings for the curve selected within the list can be made via Curve Style.

New tags can be added to or removed from this list via Button << and Button >>.

Curve Style

The following display settings can be made for each curve:

- Color:
  The color of the curve can be selected from the project colors.
- Measure point style
  The measuring points are displayed according to the setting of the 3x3 pixels.
- Solid line:
  Select this option to connect the individual measuring points with a line.
- 
- Horizontal lines
  Each individual measuring point is shown as a horizontal stroke.
- 

Number of used curves

Display of the number of curves assigned to this graph block.

Button <<

Add a tag to this graph block.

Click this button to add the tag selected from the List of all Tags. The tag will be assigned to the graph number according to the selected position in the list Curves of the Graph Object.

This button is only available if:

- An unused curve is selected in the list Curves of the Graph Object

- A tag has been selected in the List of all Tags

Button >>

Remove a tag from the graph object.

Clicking this button removes the tag selected in the Curves of the Graph Object list.

This button is only available if a curve with the assigned tag has been selected in the list of Curves of the Graph Object.

List of all Tags

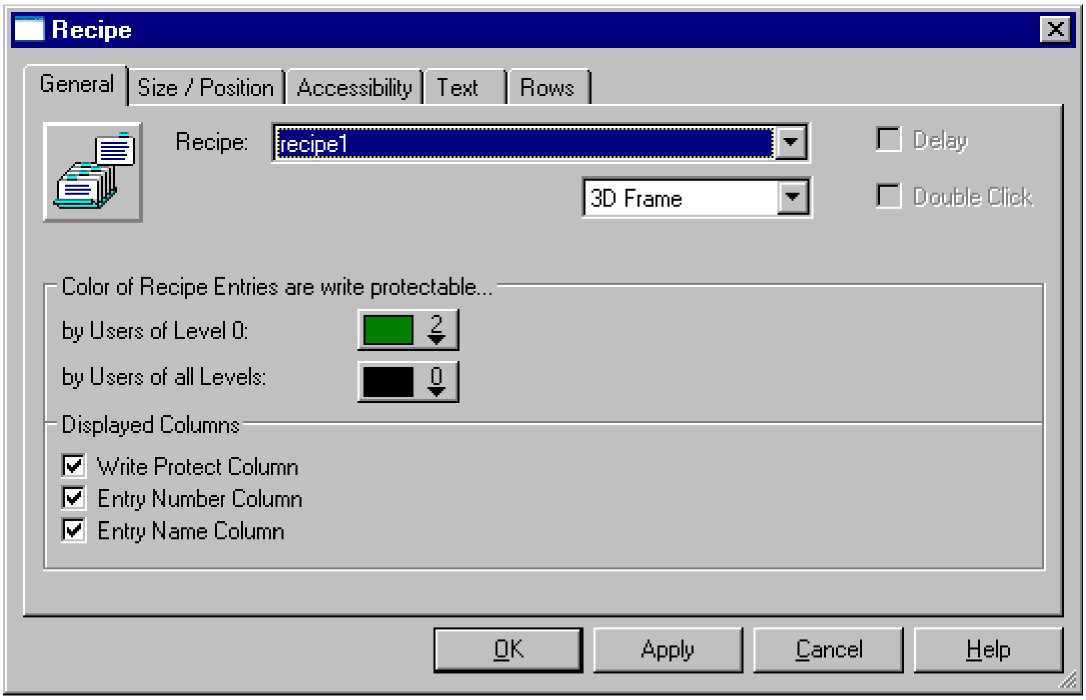
This list contains all the tags assigned to the selected graph block.

In place of tags already assigned to the graph "> used by Curve 00 <" is displayed.

See also Define Graph Blocks

10.10Recipe

10.10.1 Recipe



Recipe: recipe1

3D Frame

□ Delay

□ Double Click

Color of Recipe Entries are write protectable...

by Users of Level 0: 🟩 2

by Users of all Levels: ■ 0

Displayed Columns

☑ Write Protect Column

☑ Entry Number Column

☑ Entry Name Column

All the values of different recipe entries are stored on the MMI in the RecipeObjectName**.TAB**" file.

Note:
The recipe entries can be selected directly within the window.

Recipe Definition

Selection of the configured recipe definitions.

See also Recipe Management

3D Frame, 2D Frame, No Frame, Delay, Double Click

See description Touch zone frames and attributes

Color of write protected recipe entries

For Level 0 users

These recipe entries can be shown in a user-defined color.

For users of all levels

These recipe entries can be shown in a user-defined color.

Write Protect Column

If this option is selected, the write protection column is displayed within the recipe selection list, otherwise this column is not visible in the selection list.

See selection list in chapter Standard Mode, Enhanced Mode

Entry Number Column

If this option is selected, the column with the entry number is displayed within the recipe selection list, otherwise this column is not visible in the selection list.

See selection list in chapter Standard Mode, Enhanced Mode

Entry Name Column

If this option is selected, the column with the entry name is displayed within the recipe selection list, otherwise this column is not visible in the selection list.

See selection list in chapter Standard Mode, Enhanced Mode

Color/Font

See description Color/Font

See also Rows

10.11 Error Window

10.11.1 Error Window

Error, warning and message texts can be displayed in the Error window object. These three categories are shown in different colors. Only one Error window object can be defined for each mask. In addition to this object, most function keys are also usually necessary (e.g. scroll list up/down, Acknowledge error, etc.).

See also Error Window, Error line down, Error line up, Error confirm, Error confirm all, Error help

Note:

There are **only** two ways of transferring the error tags from the PLC to the MMI and of updating the error window:

1. Set the appropriate bits in the Control Block from the PLC.
2. Call the script function "Error Refresh"

See description "Updating error display" in GRS.HLP.

Up to 1000 entries per project can be managed at the same time (1000 lines in all Error windows). The history can contain up to 4096 error entries.

Note:

The error entries can be selected directly inside the window.

Different properties can be selected for each error tag, see Error Display. The Error help special function allows the Define Text for the selected error tag to be displayed in Help Window.

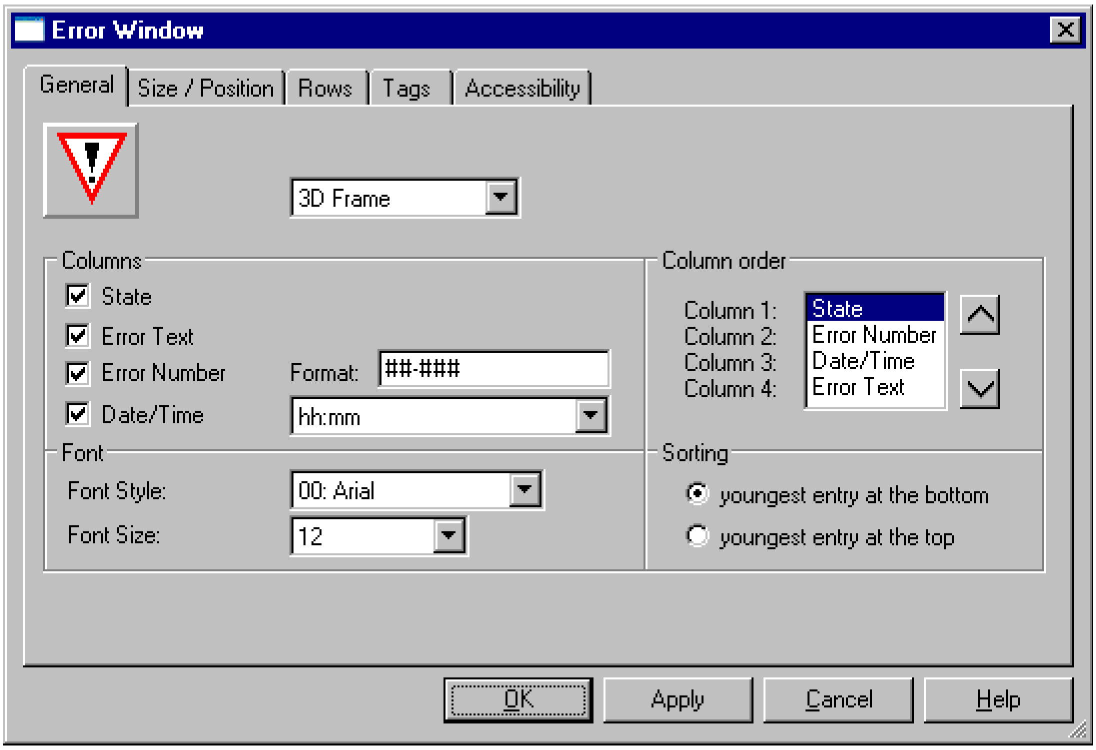
History

The History function logs the activities of the error tags with the attributes "Add to History" (cross reference). The last 4096 activities are recorded with time and date. This is carried out with an accuracy to the nearest second. When it is full, the History function overwrites the oldest entries.

See also General, Tags

10.11.2 General

General



3D Frame

Columns

☑ State

☑ Error Text

☑ Error Number Format: ##-###

☑ Date/Time hh:mm

Column order

Column 1: State
Column 2: Error Number
Column 3: Date/Time
Column 4: Error Text

Font

Font Style: 00: Arial

Font Size: 12

Sorting

● youngest entry at the bottom

○ youngest entry at the top

3D Frame

When this check box is activated, the error text is shown in a 3D frame.

Show State

When this check box is activated, the column is displayed in the error window with the corresponding error status.

0 = Error no longer present
1 = Error present
X = Error acknowledged

Show Error Text

When this check box is activated, the column with the error text is shown in the Error window. The number of characters in an error text is not restricted and cannot exceed the length of one line. If the text is longer, it will be cut off on the right.

Note:
The smaller the font size, the more text can appear in one line.

See also Error help

Show Error Number

When this check box is activated, the column with the error number (can be defined for every ERROR tag) is shown in the Error window.

Format

The Format field can be used to define the output of error numbers in the error window. The '#' character is the placeholder for a number. The following characters can be used as separators between the number placeholders: ;:.,'/-|

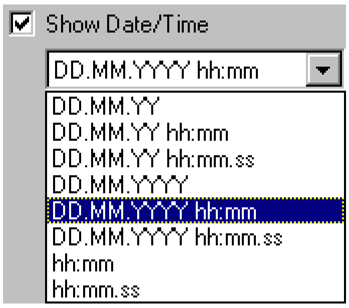
If the error number has fewer decimal places than the defined format, the places are filled with leading zeros.

If the error number has more decimal places than the defined format, the additional decimal places of the error number are truncated.

Show Date/Time

If this check box is activated, the time and date column is shown in the Error window.

The Display format of time and date can be set in the list box below.



☑ Show Date/Time

DD.MM.YYYY hh:mm

The time of the event is always logged and displayed. This applies to the following events:

- Update error bit was set
- Error was acknowledged manually

Column Order

This list can be used to define the order of visible columns as required.

Font Style

Selection list of all available fonts. The selected font style applies to the entire Error window.

Font Size

Selection list of the available font sizes for the currently selected font. The selected font size applies to the entire Error window.

Sorting

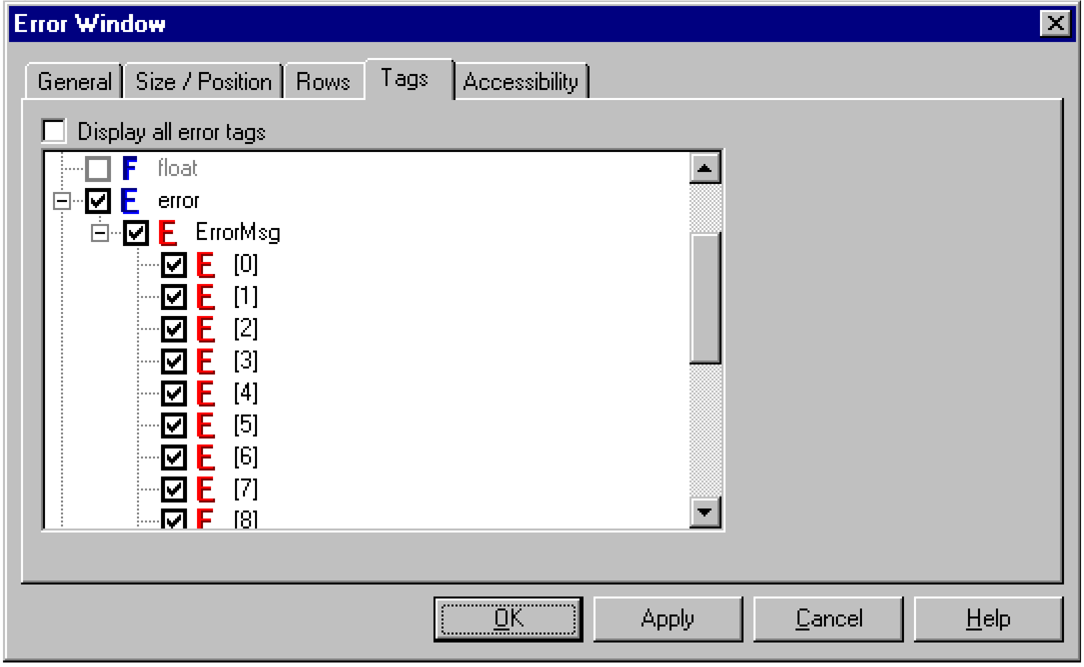
Defines the order in which the entries of the error window are sorted.

- Most recent entry at the bottom: New entries are added to the bottom of the list.
- Most recent entry at the top: New entries are added to the top of the list.

See also Error Window, Tags, Rows

10.11.3 Tags

Tags



☐ Display all error tags

- ☐ F float
- ☑ E error
  - ☑ E ErrorMsg
    - ☑ E [0]
    - ☑ E [1]
    - ☑ E [2]
    - ☑ E [3]
    - ☑ E [4]
    - ☑ E [5]
    - ☑ E [6]
    - ☑ E [7]
    - ☑ E [8]

This is used to select the error tags that are also to be displayed in the error window.

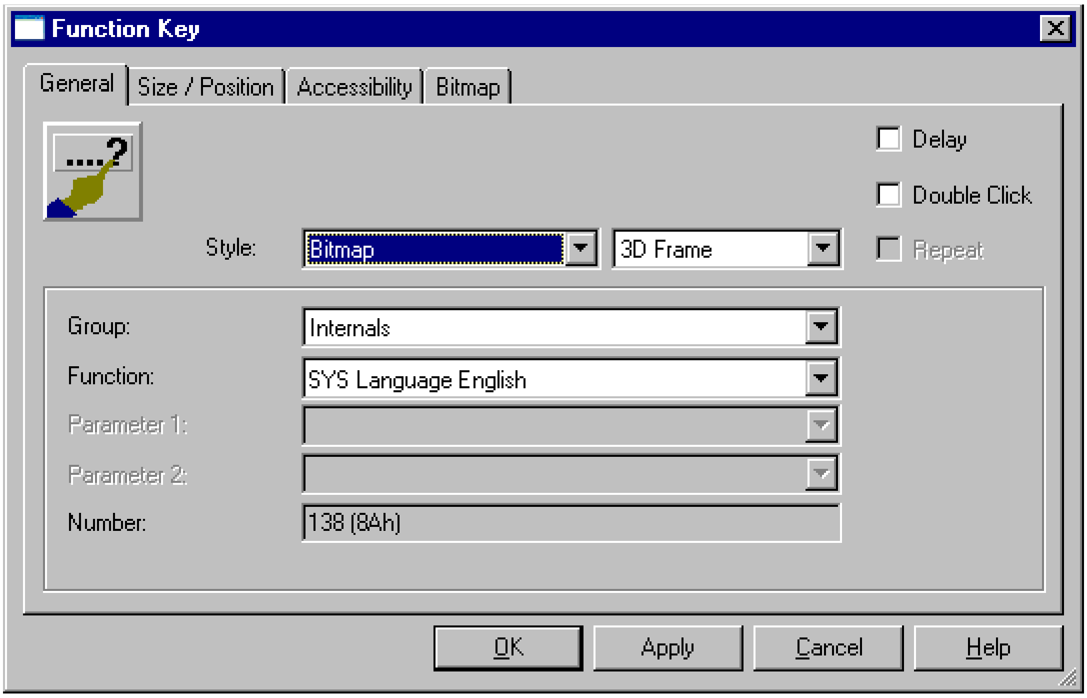
Display all errors

This option can be selected to display all the error tags in the error window.

See also Error Window, General, Rows

10.12Function Key

10.12.1 Function Key



□ Delay

□ Double Click

□ Repeat

Style: Bitmap | 3D Frame

Group: Internals

Function: SYS Language English

Parameter 1:

Parameter 2:

Number: 138 (8Ah)

This object enables a wide range of functions to be started.

The list of all available functions is read from the FUNCS.CFG file and cannot be extended by the user since each function must also be supported by the GRS software.

The range of all functions were divided into thematic groups to ensure a greater overview.

See also Overview.

3D Frame, 2D Frame, No Frame, Delay, Double Click

See description Touch zone frames and attributes

Style

This setting is used to define the basic appearance of the object for the ON and OFF states.

- Text
  The button can be assigned a text which is selected and defined on the Text panel. A text can be defined with a different color, font and font size for every state.
- Color
  This button is also shown as a colored area. The color can be selected from the Color Selection dialog that appears. No text is displayed.
- Bitmap
  This button shows a picture. The pictures are selected on the Bitmap panel.
- Inverse
  The object is inverted if this function is switched on. A frame is not drawn.
- Transparent
  The button is transparent and not visible on the MMI. In the Galileo design software it is marked by a dotted line.

Repeat

If this attribute is selected the function will be executed repeatedly. The repetition rate does not depend on the duration of the actuation:

- firstly 3 times slowly (approx. 3 seconds)
- up to 7 seconds approx. 10 times per second
- longer than 7 seconds approx. 100 times a second

This attribute is not available with all functions.

Group

Selection list of all available function groups. This option does not define a particular function but only the type of preselection for the function required.

For this see also Overview.

Function

This selection list shows all available functions of the group selected above it. A function for the object concerned can be selected here.

See also Overview.

Parameter 1,2

This additional definition is only required for certain functions (such as, for example, Print Form No.xy for selecting the correct form number).

The possible entries for this field are determined by the function selected. For example, when the special function Inc 1 (assigned) is selected for incrementing a tag, all tags are made available in this drop-down list box.

The following list contains the possible parameter types:

User Level:	Number of a user level (see Password Settings)
Time/Date Format:	Format of time and date (see Display format of time and date)
Printing Form:	Number of a printing form (see Define Printing Form)
Graph Object No.:	Number of a graph object (see No. of Graph Object)
Graph Block:	Name of a graph block (see Define Graph Blocks)
Mask:	Name of a mask file (see Project Masks)
Per Cent:	Per cent value from 0 up to 100
Recipe:	Name of a Recipe Object
Tag:	Name of a tag (see Defining Tags)
Value:	Value from –32767 up to 32768

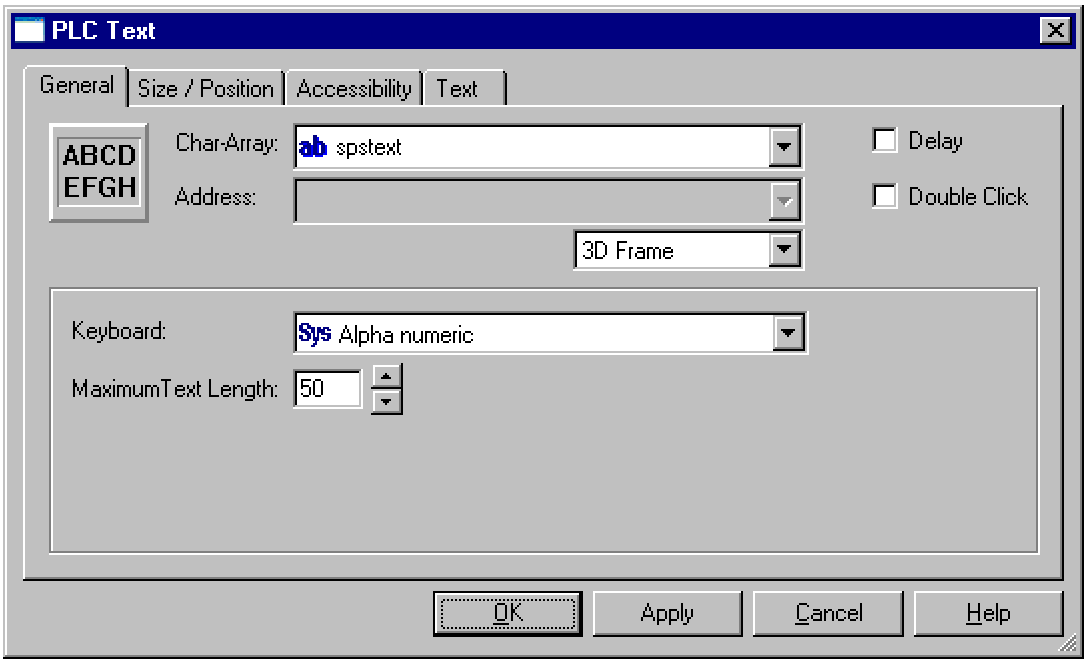
Number

This section displays the number of the selected function in decimal or hexadecimal format. This number is only provided for information purposes and is used when initiating the function from the PLC.

See also Initiating functions from the PLC and "**Control and Status Data Block**" in GRS.HLP

10.13PLC Text

10.13.1 PLC Text



Char-Array: spstext

Address:

3D Frame

☐ Delay

☐ Double Click

Keyboard: Alpha numeric

MaximumText Length: 50

This object enables the display of a character array on the MMI.

Whether the object is a touch zone or not depends on the Keyboard setting. When no keyboard is selected, the object is automatically displayed.

Char-Array

List of all existing char-arrays. One of these Tags can be selected for the object.

Button ⇥

Clicking this button will call up the Definition of Tags dialog immediately.

Address

This field shows the PLC address of the selected Tag which has been referenced. Otherwise "Addr ???" will appear.

If a Panel Type with several communications cards is used and the data block for this tag is sent to both PLCs, both addresses will be displayed. The addresses start with "0=" for the communications card in slot 0 and "1=" for the communications card in slot 1.

See also Definition of Tags

3D Frame, 2D Frame, No Frame, Delay, Double Click

The attributes **Delay** and **Double Click** are only available for objects with a keyboard.

See description Touch zone frames and attributes

Keyboard

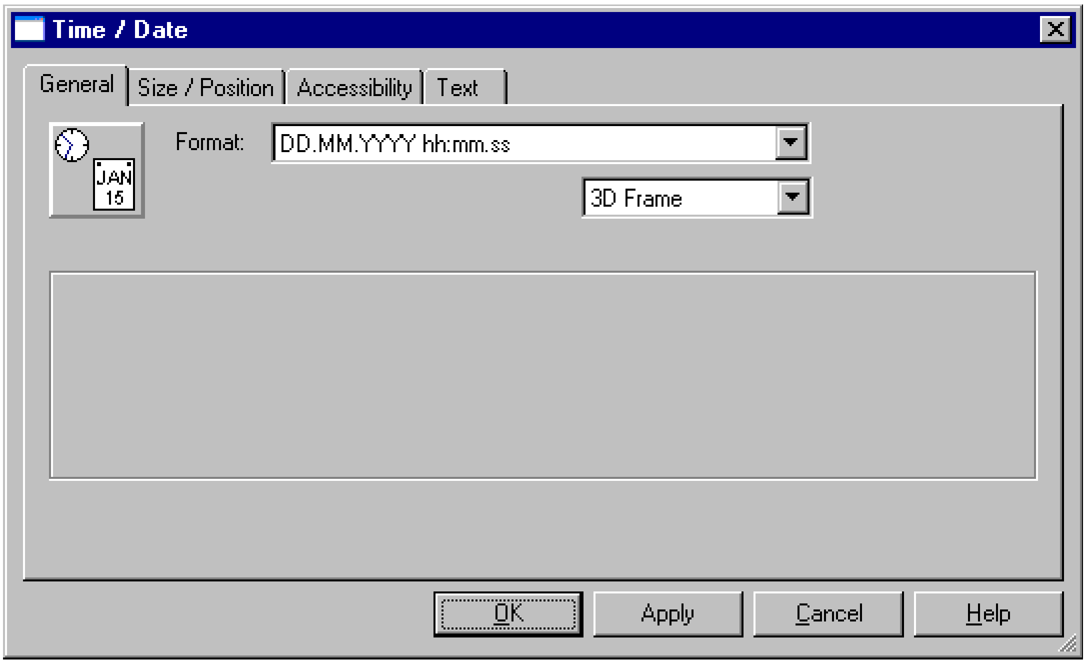
List of available keyboards to enter a value. One of these keyboards (with return value of type "string") can be selected. If "**Select**" is used, the value can be adjusted with a Function Key from the group Keyboards or Character Entry. As soon as a keyboard is selected, the object becomes a touch zone. If no keyboard is selected, the object is a display without a touch zone.

Maximum Text Length

Defines the maximum number of characters that can be entered. However, the maximum text length cannot not exceed the size of the PLC text if Termination is not used.

10.14TIME/DATE

10.14.1 TIME/DATE



Format: DD.MM.YYYY hh:mm.ss

3D Frame

This object can be used to display the time and/or date. The integrated clock of the MMI is used for this function. The clock module in the MMI can be synchronized with the PLC. For this see the section "Transferring Time/Date" (see description GRS.HLP). The special function US date and time On/Off enables a the time display to be changed from 24 hour time to US format.

See also Summer time On/Off, Set day, Set hour, Set minute, Set month, Set second, Set year

Format

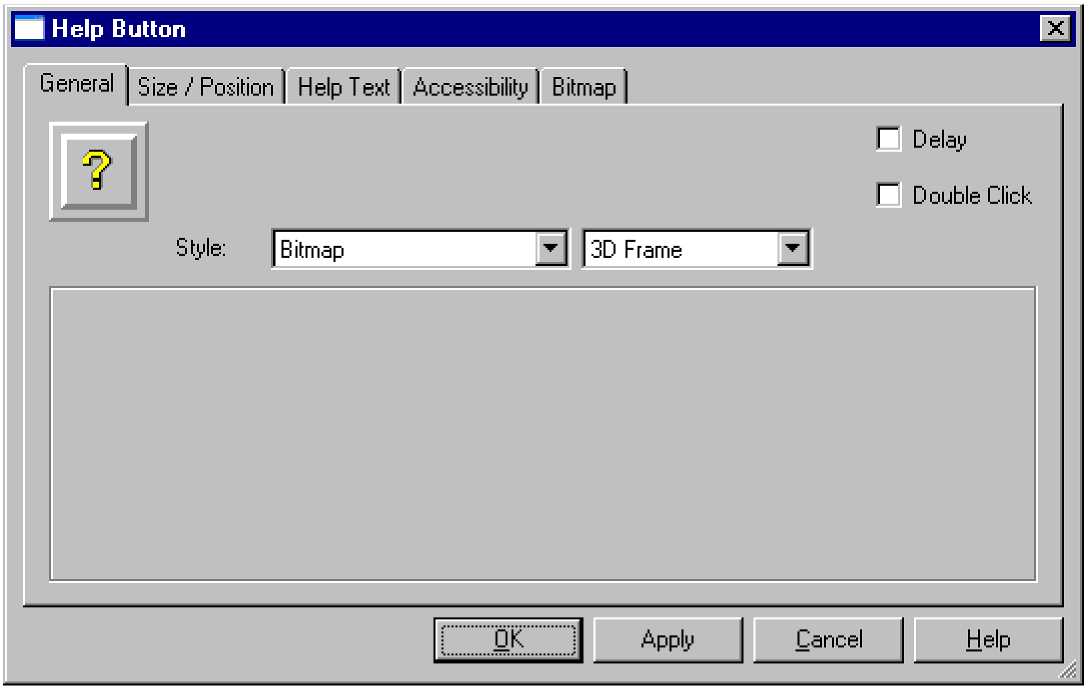
The Display format of time and date can be set in this field.

3D Frame, 2D Frame, No Frame

See description Touch zone frames and attributes

10.15HELP BUTTON

10.15.1 HELP BUTTON



☐ Delay

☐ Double Click

Style: Bitmap | 3D Frame

Use this object to display any text in a Help Window on the MMI. A help text can be assigned to each help button. The Help window is only visible after a Help button has been pressed or the Error help function activated in conjunction with an Error Window. The Help window disappears again as soon as the MMI is touched.

The color, size and position of this window can be defined as required and is implemented with the Help Window object.

3D Frame, 2D Frame, No Frame, Delay, Double Click

See description Touch zone frames and attributes

Style

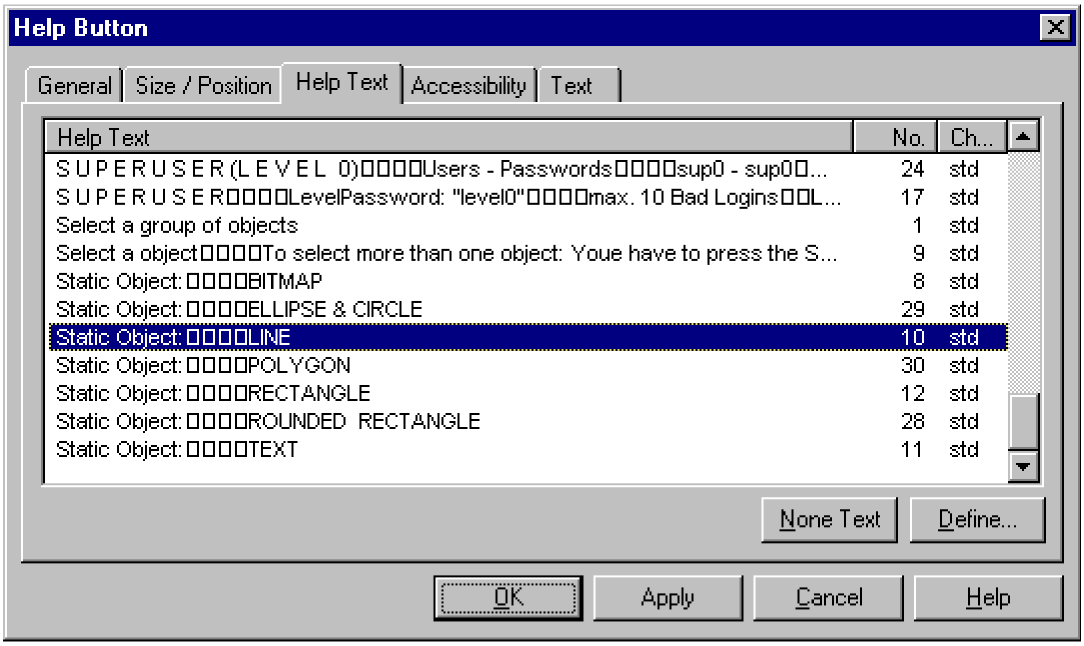
This setting is used to define the basic appearance of the object.

- Text
  The button can be assigned a text which is selected and defined on the Text panel. A text can be defined with a different color, font and font size for every state (ON/OFF).
- Color
  This button is also shown as a colored area. The color can be selected from the Color Selection dialog that appears. No text is displayed.
- Bitmap
  This button shows a picture. The pictures are selected on the Bitmap panel.
- Transparent
  The Help button object is transparent and is not visible in the mask on the MMI. The object is marked in the design software by a dotted line.

Color

Selecting the Color style allows the color of the button to be defined from the selection list.

10.15.2 Help Text



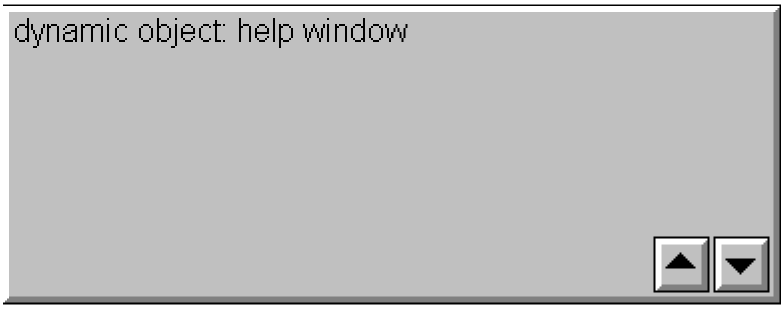
Help Text	No.	Ch...
SUPERUSER(LEVEL 0)□□□□Users - Passwords□□□□sup0 - sup0□...	24	std
SUPERUSER□□□□LevelPassword: "level0"□□□□max. 10 Bad Logins□□L...	17	std
Select a group of objects	1	std
Select a object□□□□To select more than one object: Youe have to press the S...	9	std
Static Object: □□□□BITMAP	8	std
Static Object: □□□□ELLIPSE & CIRCLE	29	std
Static Object: □□□□LINE	10	std
Static Object: □□□□POLYGON	30	std
Static Object: □□□□RECTANGLE	12	std
Static Object: □□□□ROUNDED RECTANGLE	28	std
Static Object: □□□□TEXT	11	std

This list can be used to select the Help text that is to be shown when the button in the Help Window object is touched.

Note:

If the Help text does not have sufficient space on the MMI due to the number of lines in the Help window, two buttons will appear automatically at the bottom right corner of the Help window for scrolling the Help text.

If a line is too wide for the Help window, it will be automatically broken on the MMI at the last space.



Show empty texts

When this check box is activated, texts numbers with no texts are also displayed.

Text numbers that were once defined can then only be replaced with a blank string. Unused text numbers can only be removed with the Text optimizer.

See also Optimize Texts

None Text

Clicking this button selects a text number with a blank string.

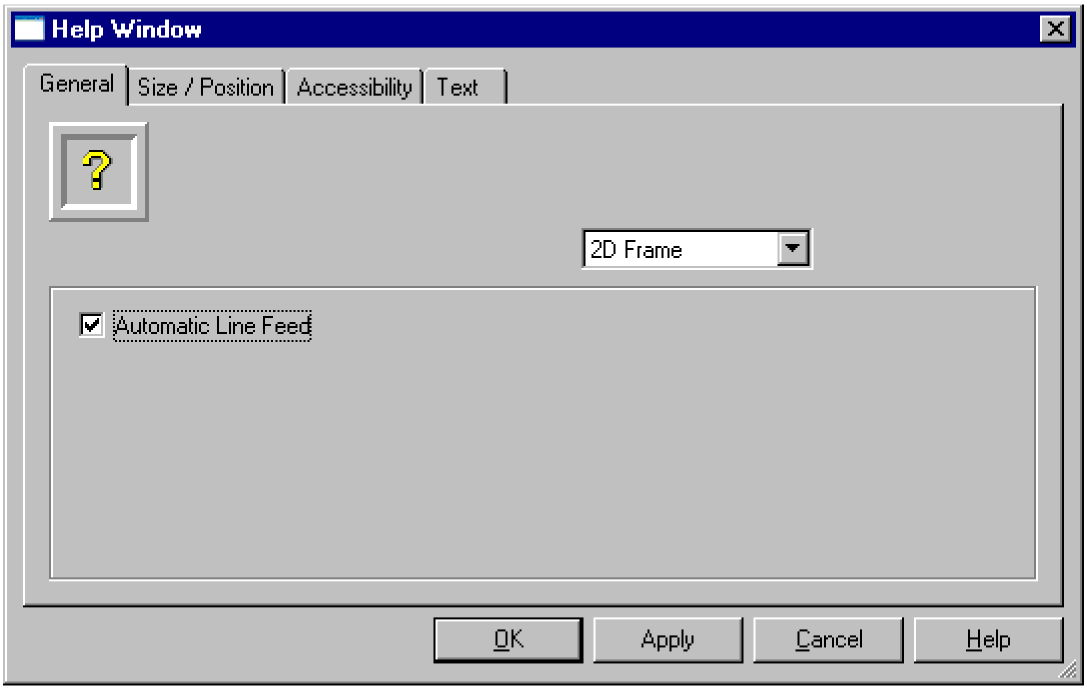
Define...

If the required Help text does not yet exist, clicking this button calls up the dialog for defining Help texts. New texts can be defined and existing texts edited in the dialog.

See description in the section Define Text.

10.16 Help Window

10.16.1 Help Window



Help Window

General | Size / Position | Accessibility | Text

2D Frame

☑ Automatic Line Feed

This object can be used for inserting a help window.

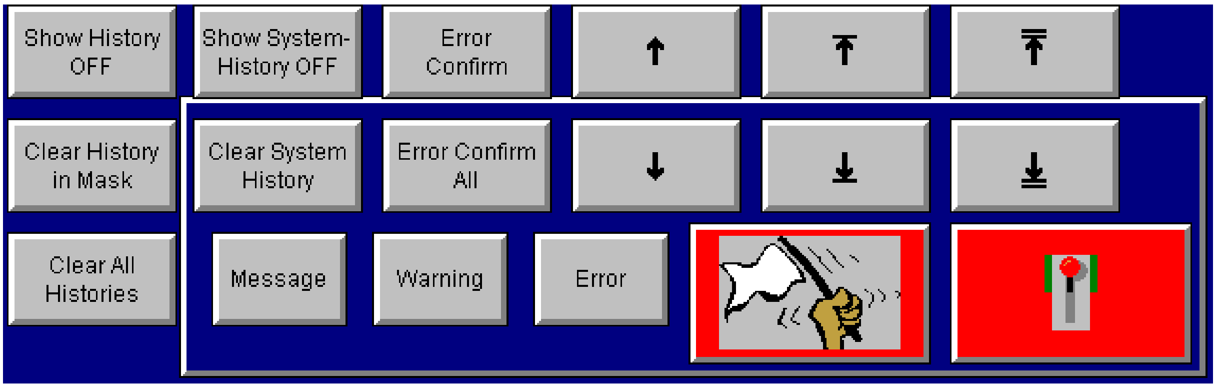
A help window is used to display the texts for a Help Button or the help texts of an error message. See section Error Text for information on defining help text for error messages.

Use this to define the font style, font size and color of the text contained in the Help window. The position and the size of the object determines also the position and size of the help window.

Only one help window can be defined for each mask, i.e. all help texts of a mask are displayed at the same position and with the same parameters (font style, font size, color etc.).

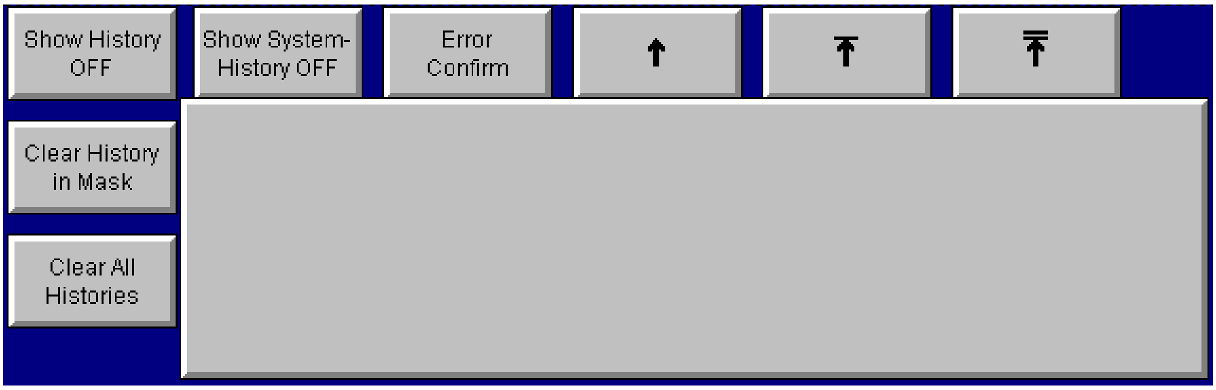
Since a help window can cover a large area of the screen many times (it is only temporarily visible) the view of the object can be switched on and off via the menu point Help Window in the View menu.

If the view is switched off, ...



- ...only the frame of the Help window with transparent contents will be shown.
- ...and a different object is above or below a Help window object the object is recognized when the mouse is clicked.

When the view is switched on, ...



- ... the content of the help window is drawn in the selected color, irrespective of whether static objects are underneath it or not. Dynamic objects can be moved in front of this object. See Order of objects.

3D Frame, 2D Frame, No Frame

See description Touch zone frames and attributes

Automatic Line Feed

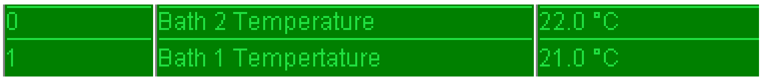
Line feeds are inserted automatically, if the text is broader than the help window.

If this option is switched off, then the developer must define line feeds within the text. If the texts are nevertheless broader than the help window, then the remaining text is cut off.

10.17 Parameter List

10.17.1 Parameter List

This object is used to show and change tags in a list. This list contains up to 3 columns: Number column (see Number), Description column (see Description Text) and Value column. The Value column contains the current tag value, which is shown in the same way as in the Value Entry / Display objects. The tag value is converted and always displayed with decimal places and unit of measure depending on the settings described in the section Units and Conversion Factors. The unit of measure is shown on the right of the tag value. The following picture shows an example of a parameter list object:



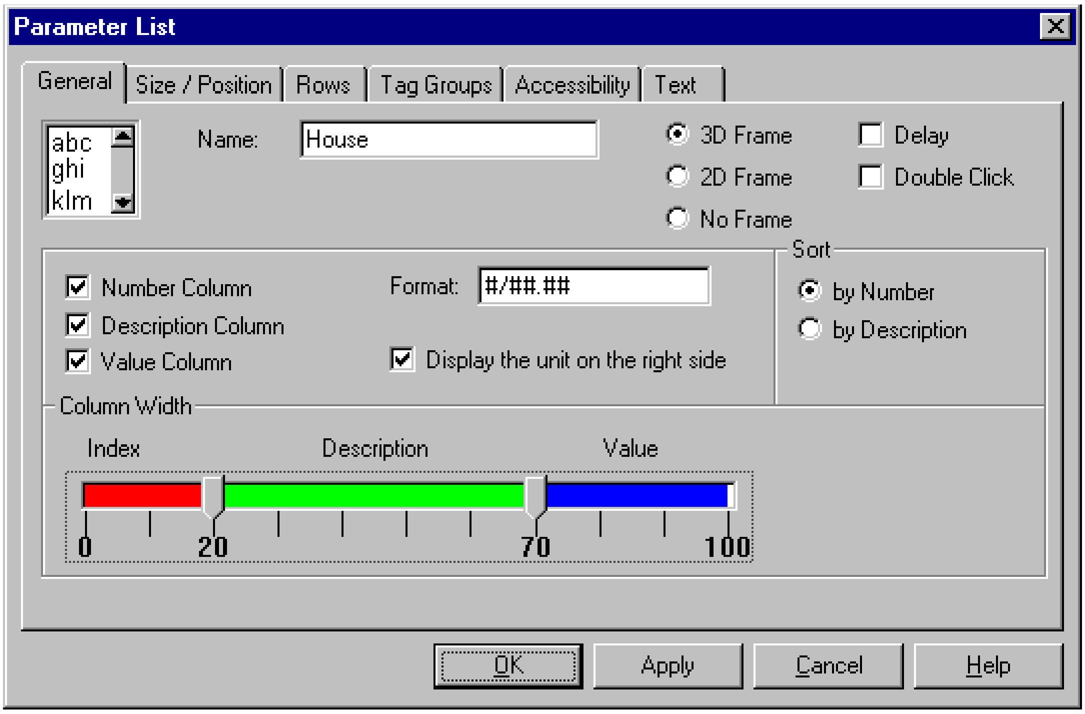
0	Bath 2 Temperature	22.0 °C
1	Bath 1 Tempertature	21.0 °C

Note:
A tag value can be changed directly in the list by selecting the tag value concerned. This will open the Keyboard of Parameter List

The Sort by Description, Sort by Number and Sort ascend/descend special functions can be used to specify sorting inside the parameter list.

See also Parameter List Settings of tags, "Use Parameter List" option.

The properties of the parameter list are set in the following dialog:



Parameter List

Name: House

● 3D Frame
○ 2D Frame
○ No Frame

□ Delay
□ Double Click

☑ Number Column
☑ Description Column
☑ Value Column

Format: #/##.##

☑ Display the unit on the right side

Sort
● by Number
○ by Description

Name

Name of the parameter list object. If several parameter list objects are defined on the same mask, different names must be assigned to them.

3D Frame, 2D Frame, No Frame

See description Touch zone frames and attributes

Number Column

Displays the numbers in the parameter list. The Number is defined for the tag.

Format

The Format field is used to define the output format of the number in the parameter list. The '#' character is the placeholder for a number. The following characters can be used as separators between the number placeholders: ;:.,'/-|

If the number has fewer decimal places than the defined format, the places are filled with leading zeros.

If the error number has more decimal places than the defined format, the additional decimal places of the error number are truncated.

Description Column

Displays the description texts in the parameter list. The Description Text is defined for the tag.

Value Column

Displays the tag values in the parameter list.

Unit right of Value

If the Value Column Parameter List is visible, this option will display Units to the right of the tag value.

Column Width

Defines the width of the visible columns in %.

Sorting

Sorts the entries of the list according to the following criteria:

- Number
- Description

See also Sort by Description, Sort by Number, Sort ascend/descend

Variable Group

Defines which Tag Groups are displayed in the parameter list. All the used groups are displayed in the left window, and all unused groups in the right window.

Font

Selection list of all available fonts. The selected list is used for the entire Help window and for all texts it contains.

Font Size

Selection list of the available font sizes for the current font. The selected font size is used for the entire error window.

Foreground Color

Defines the foreground color for an operable and non-operable list entry.

Background Color

Defines the background color for an operable and non-operable list entry.

See also Rows

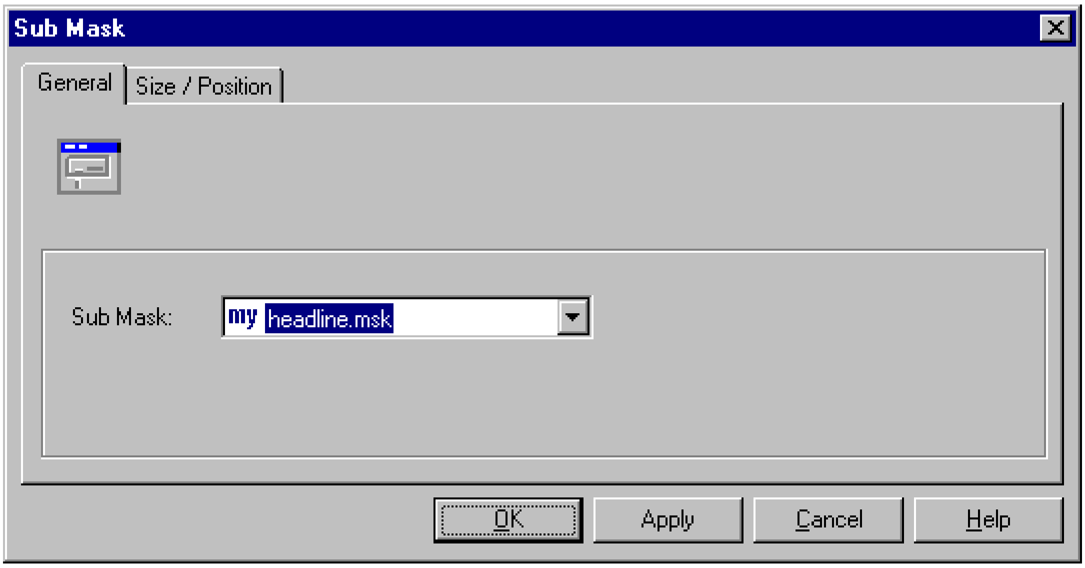
10.18Sub Mask

10.18.1 Sub Mask

This object allows you to embed masks of type "Sub Mask" in a mask.

Sub masks are suitable for bringing together objects that are used at several locations in the project: for example, header lines, footer lines or recurring object groups.

Note:
The sub mask has the advantage that a modification only has to be made at one point in the project, in the sub mask. The modification in the sub mask is automatically transferred to all other sub mask objects.



Sub Mask: my headline.msk

Sub Mask

Selection of the mask to be embedded as a sub mask object.

10.19Camera

10.19.1 Camera

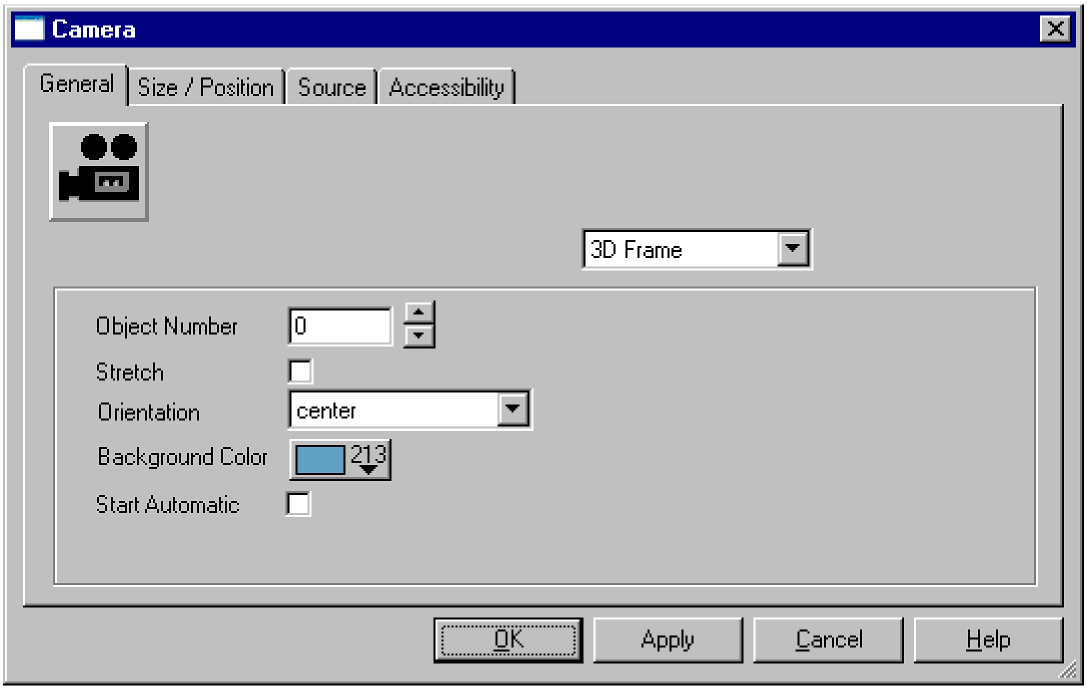
This object allows the display of continuously changing pictures. The individual pictures saved by web cameras can be loaded periodically and displayed. Local, network and http directories are supported.

Displayed pictures can also be saved or individual pictures loaded explicitly.

See also camera functions

10.19.2 General

General



3D Frame

Object Number: 0

Stretch: □

Orientation: center

Background Color: 213

Start Automatic: □

3D Frame, 2D Frame, No Frame

See description Touch zone frames and attributes

Object Number

Each camera object is identified by an object number. The object number is required with different camera functions.

Stretch

If the option is selected, all the pictures displayed will be enlarged or reduced to suit the size of the object.

Note:
The zoom functions for pictures require a large amount of CPU capacity and should normally be avoided.

If the picture to be displayed is larger than the object, it is aligned to the "top left" and its size adjusted to the size of the object (cut).

Orientation

Determines where the picture is drawn within the camera object. The following settings are available:

- upper left
- upper center
- upper right
- center
- lower left
- lower center
- lower right

Background Color

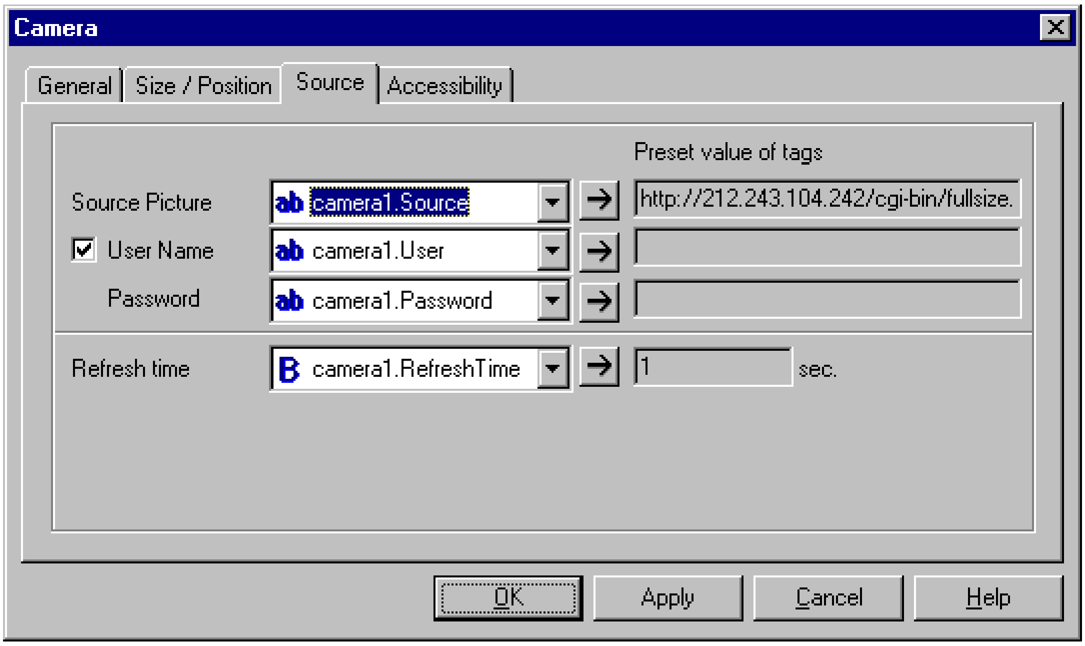
Defines the background color of the object.

Start Automatic

Starts the camera object automatically with the defined source parameters.

10.19.3 Source

Source



Preset value of tags

Source Picture camera1.Source http://212.243.104.242/cgi-bin/fullsize.

☑ User Name camera1.User

Password camera1.Password

Refresh time camera1.RefreshTime 1 sec.

All settings are defined by means of tags so that they can be modified on the device.

Source Picture

A Char-Array is used here to define the source path including the file name. Local, network and http directories are supported. The picture must be available in one of the following formats: GIF, JPEG and BMP.

Note:
Compressed picture formats should be used in order to ensure a fast processing speed.

Example:

Local	\StorageCard\Pictures\bild1.bmp
Network	\\PC_Meier\Temp\Pictures\picture1.jpg
http	http://www.server.com/pictures/picture1.pcx
http	http://192.168.2.200:80/pictures/picture1.pcx

User Name

A user name and password may be required for FTP or http. The user name can be defined here using a Char-Array.

Password

A user name and password may be required for FTP or http. The password can be defined here using a Char-Array.

Refresh Time

The refresh time defines the time between two picture updates. If the refresh time is set to 0, the picture is only loaded once and displayed.

Note:
However, this is only a minimum setting as the transfer of a picture may take longer, such as from an http directory. The minimum refresh time is 1 second.

10.20Slider

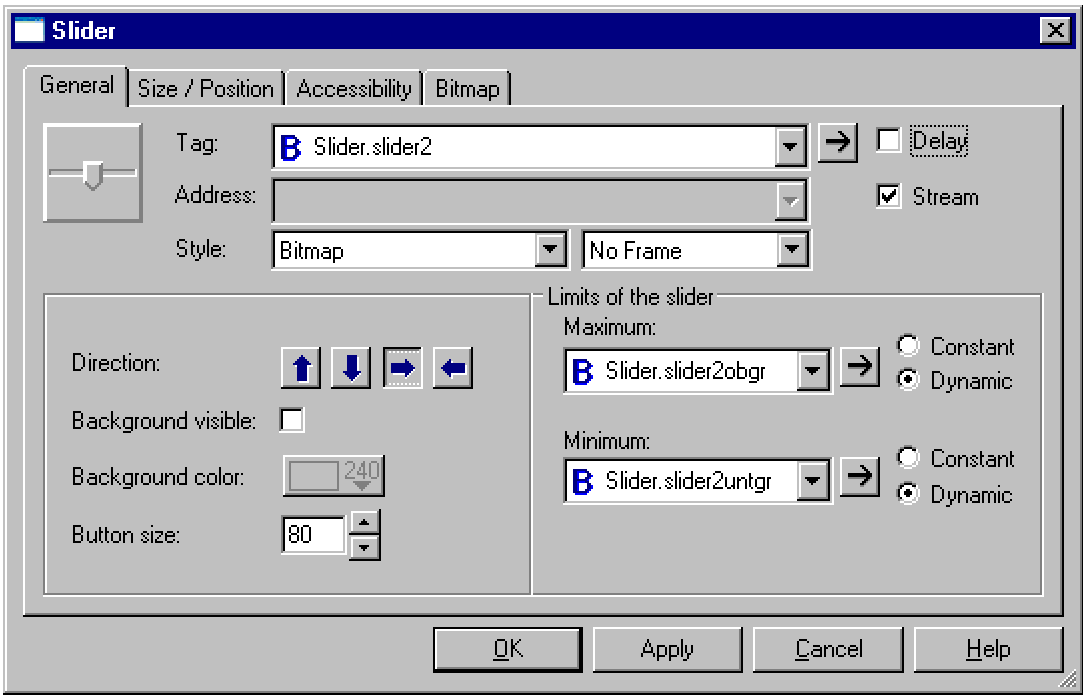
10.20.1 Slider

The slider object is used for the coarse adjustment of tag values, e.g. light dimming. The object can be defined with a horizontal or vertical format.

Note:
On IR touch devices, the minimum shift position of the slider is fixed by the resolution of the light matrix.

See also Slider General Settings

10.20.2 General



Tag: Slider.slider2

Address:

☐ Delay

☑ Stream

Style: Bitmap | No Frame

Direction: ↑ ↓ → ←

Background visible: ☐

Background color: 240

Button size: 80

Limits of the slider

Maximum: Slider.slider2obgr ○ Constant ● Dynamic

Minimum: Slider.slider2untgr ○ Constant ● Dynamic

Tag

List of all existing tags of type BYTE, WORD, DWORD and FLOAT. The data direction must be MMI-PLC. One of these tags can be selected for the object.

Button →

Clicking this button will call up the Definition of Tags dialog immediately.

Address

This field shows the PLC address of the selected Tag.

If a Panel Type with several communications cards is used and the data block for this tag is sent to both PLCs, both addresses will be displayed. The addresses start with "0=" for the communications card in slot 0 and "1=" for the communications card in slot 1.

See also Definition of Tags

Style

This setting is used to define the basic appearance of the object.

- Text
  The button can be assigned a text which is selected and defined on the Text panel. A text can be defined with a different color, font and font size for every state (ON/OFF).
- Color
  This button is also shown as a colored area. The color can be selected from the Color Selection dialog that appears. No text is displayed.
- Bitmap
  This button shows a picture. The pictures are selected on the Bitmap panel.

Frame

See description Touch zone frames and attributes

Delay

See description Touch zone frames and attributes

Stream

When this option is set, the actual position during sliding is continuously stored in the tags. This is useful if an action is to be executed while the button is being moved: e.g. adjusting light. Otherwise, the position is only saved in the tag when the slider is released.

Direction

The arrow buttons can be used to define the run direction of the slider.

Background visible

If this option is deactivated, only the button of the object is drawn. Otherwise, the entire background area of the slider is filled with the background color.

Note:
If the background is defined as 'not visible', other dynamic objects cannot be positioned in this area!

Background color

The color of the slider background can be defined here.

Button size

The value defines the button width in pixels for a horizontal slider or the button height for a vertical slider.

Limits

The limit values define the range that is to be shown with the slider.

Maximum

With a fixed limit value, this field is an entry field and with a dynamic limit value a drop-down list box for selecting a Tag.

The maximum value defines the tag value at which the button of the slider is drawn at the maximum position in the respective direction.

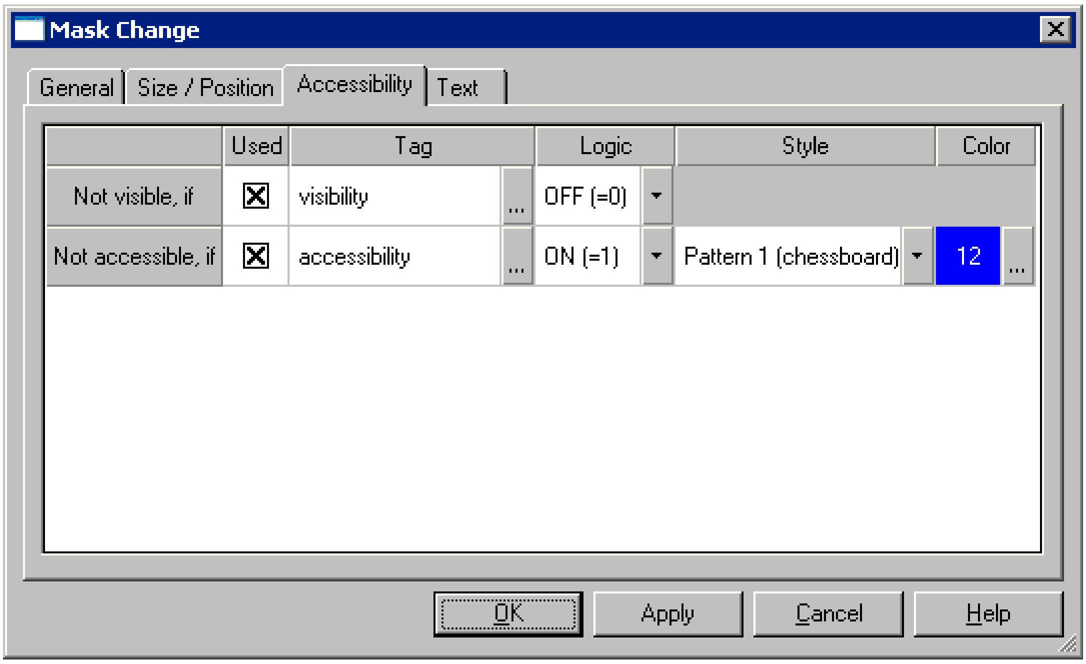
Minimum

With a fixed limit value, this field is an entry box and with a dynamic limit value a drop-down list box for selecting a Tag.

The minimum value defines the tag value at which the button of the slider is drawn at the minimum position in the respective direction.

10.21 Accessibility

10.21.1 Accessibility



	Used	Tag	Logic	Style	Color
Not visible, if	☒	visibility ...	OFF (=0) ▾		
Not accessible, if	☒	accessibility ...	ON (=1) ▾	Pattern 1 (chessboard) ▾	12 ...

Each dynamic object has this panel for defining the accessibility. A dynamic object can be removed from the display or deactivated using two selectable bit tags. The setting is only active if the corresponding bit tag is either On (=1) or Off (=0). Each dynamic object has this panel for defining the accessibility.

Object is not accessible

Although the object is displayed and refreshed, it does not react to any touch operations depending on the status of the selected Bit - On (=1) or Off (=0). Disable Style with 'not accessible" changes as soon as the bit tag is switched to the required state. The display is refreshed regardless of whether the object can be accessed or not. If the Object is not displayed option is also used, the object is only accessible if the object is displayed at the same time. This attribute can only be used for objects that can be operated such as Mask Change, Button, Switch, Value Entry, Bargraph, Recipe, Function Key, PLC Text, Help Button, Help Window and Slider.

Object is not displayed

The object is not shown in the mask as if it had never been defined, depending on the status of the selected Bit - On (=1) or Off (=0). If the bit status is changed again, the object is again displayed immediately. The tag is nevertheless updated internally (e.g. read operation from the PLC). If the access bit changes its status, the object is removed or reshown immediately.

Bit

List of all available bits of type MMI-PLC. One bit tag can be selected to activate the Object is not accessible and Object is not displayed setting. If "NONE" is selected, the setting has no effect.

Address

These fields show the PLC address of the selected (Bit).

On (=1)

If this attribute is selected, the object cannot be operated or displayed if the selected bit = 0.

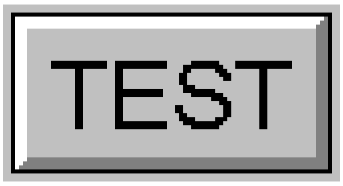
Off (=0)

If this attribute is selected, the object cannot be operated or displayed if the selected bit = 1.

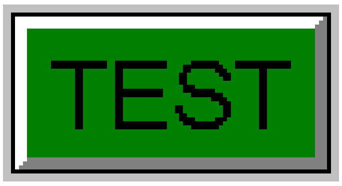
Disable Style with 'not accessible"

The following display styles of inaccessible objects are possible:

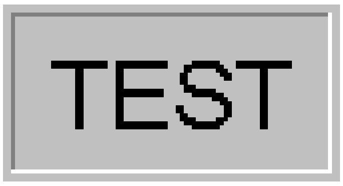
No Change



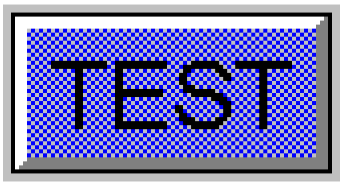
Solid Background Color



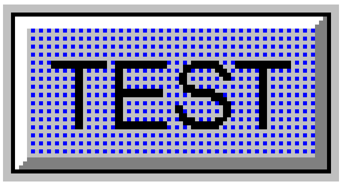
3D-Display instead of 3D-Button



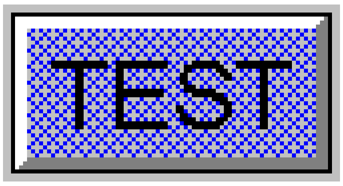
Pattern 1



Pattern 2



Pattern 3



No Change

If this option is selected, the object is displayed unchanged in the non-accessible state.

Solid Background Color

If this option is selected, the background color of the object changes in the non-accessible state (defined under Disable Style with 'not accessible").

3D-Display instead 3D-Button

If this option is checked, the object changes frame type from 3D button to 3D display in the inaccessible state.

See also Touch zone frames and attributes

Pattern 1 (chessboard)
If this option is checked, this grid pattern is shown over the object when it is not accessible. The Disable Style with 'not accessible" of the grid can be selected as required.

Pattern 2 (raster)
If this option is checked, this grid pattern is shown over the object when it is not accessible. The Disable Style with 'not accessible" of the grid can be selected as required.

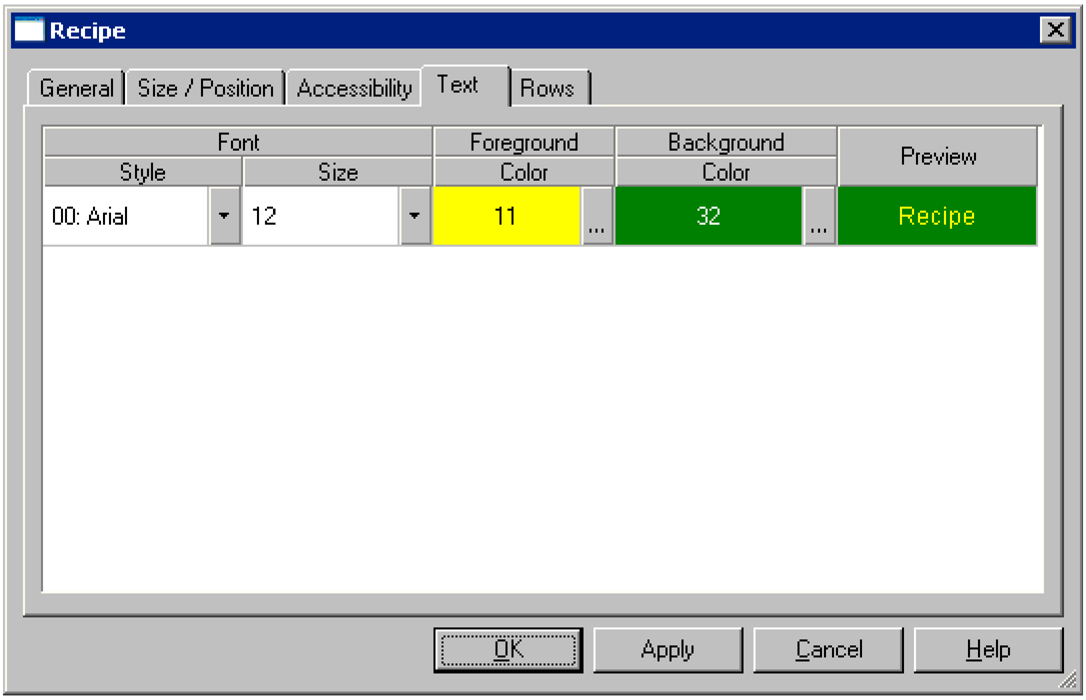
Pattern 3 (diagonal)
If this option is checked, this grid pattern is shown over the object when it is not accessible. The Disable Style with 'not accessible" of the grid can be selected as required.

Color
This color is only in applicable in conjunction with the options **Solid Background Color**, **Pattern 1**, **Pattern 2** and **Pattern 3**

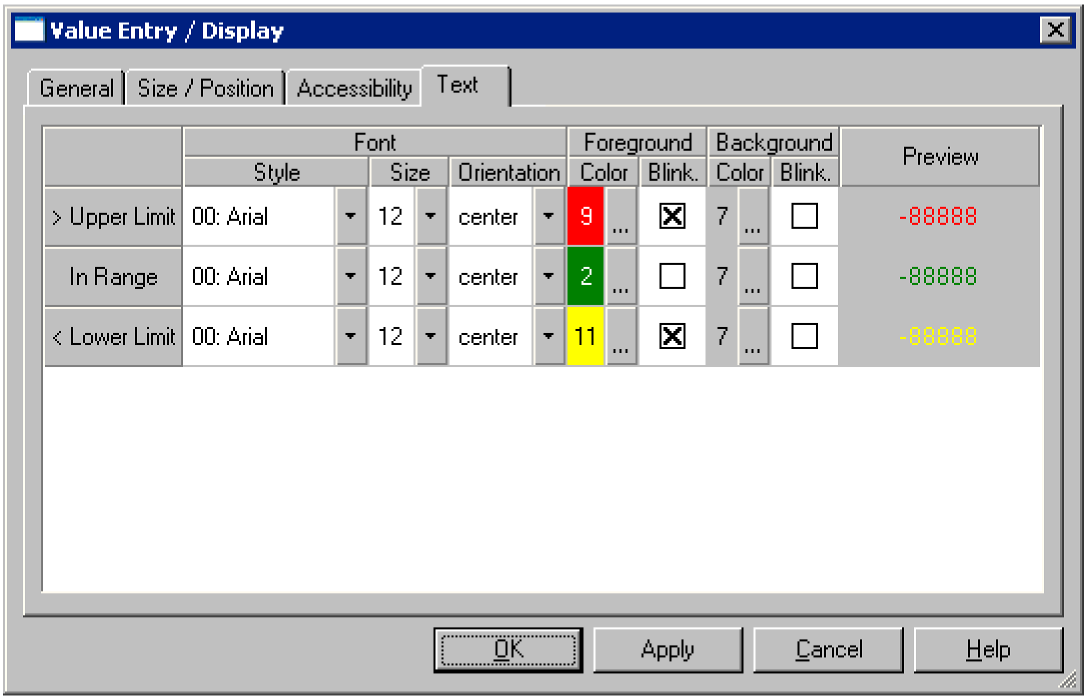
10.22Color/Font

10.22.1 Color/Font

There are many points where the color, font style, and font size for text or values must be defined. Since it is not necessary to make the same settings for every point, different fields cannot be seen.



Font		Foreground	Background	Preview
Style	Size	Color	Color	
00: Arial	12	11	32	Recipe



	Font			Foreground		Background		Preview
	Style	Size	Orientation	Color	Blink.	Color	Blink.	
> Upper Limit	00: Arial	12	center	9 ...	☒	7 ...	☐	-88888
In Range	00: Arial	12	center	2 ...	☐	7 ...	☐	-88888
< Lower Limit	00: Arial	12	center	11 ...	☒	7 ...	☐	-88888

A color can be selected as the background color of the font style concerned.

Font Style

Selection list of all available font styles.

The selected font style applies to the entire text field.

The font style for value objects (value display, value entry) is the same for all three ranges (Minimum...Lower Limit, Lower Limit...Upper Limit, Upper Limit...Maximum).

Font Size

Selection list of available font size of the current font.

The selected font size applies to the entire text field.

The font size for the value objects (value display, value entry) is the same for all three ranges (Minimum...Lower Limit, Lower Limit...Upper Limit, Upper Limit...Maximum).

Alignment

The text can be left-justified, right-justified or centred in the field.

This setting is not always available.

The alignment for value objects (value display, value entry) is the same for all three ranges.

Foreground

Selection list of all available colors.

A color can be selected for a font style.

Background

Selection list of all available colors.

Blinking

This defines whether text or its background is to flash. The blinking effect is caused by inverting the colors.

This attribute is not available with Recipe objects.

Preview

The Preview field shows how the display will appear on the MMI. With large or long texts, only a section of the button will be shown.

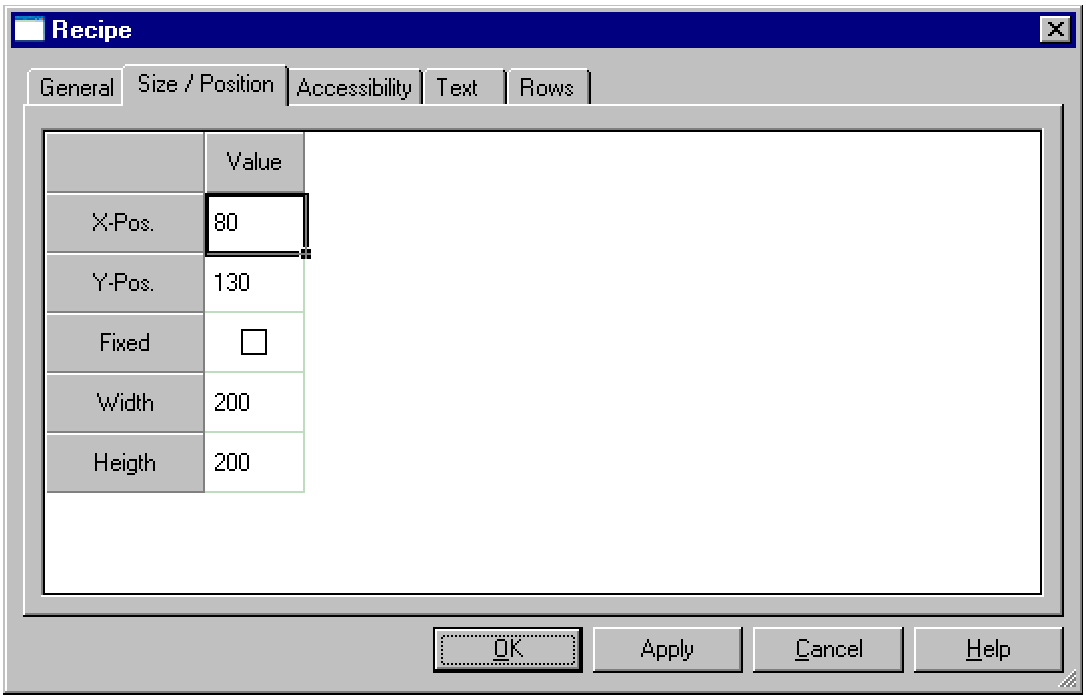
Value >= Upper Limit / Value In Range / Value <= Lower Limit

These elements are only available for value objects (value display, value entry).

The color can be defined here separately for each of the three ranges. The font style, font size and alignment is the same for all three ranges.

10.23Size / Position

10.23.1 Size / Position



	Value
X-Pos.	80
Y-Pos.	130
Fixed	□
Width	200
Heigth	200

You can change the size and position manually.

X position

Defines in pixels the space between the left edge of the mask and the object.

Y position

Defines in pixels the space between the top edge of the mask and the object.

Fixed

Fixes the object at this position. See Fixing

Width

Defines the width of the object in pixels.

Height

Defines the height of the object in pixels.

10.24Rows in List Objects

10.24.1 Rows

Row Height in Pixel

Define the height of the rows in pixel independent of the font size.

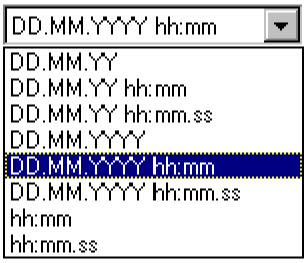
Save ID in

Error Window	Saves the error ID of the currently selected entry in the selected tag.
Recipe	Saves the index of the currently selected entry in the selected tag.
Parameter List	Saves the tag number of the currently selected entry in the selected tag.

10.25Display format of time and date

10.25.1 Display format of time and date

The time and/or date display is defined in the display format.



DD	Day (1..31)
MM	Month (1..12)
YY	Year two digit (e.g. 97)
YYYY	Year four-digit (e.g. 1997)
hh	Hour (0..23)
mm	Minute (0..59)
ss	Second (0..59)

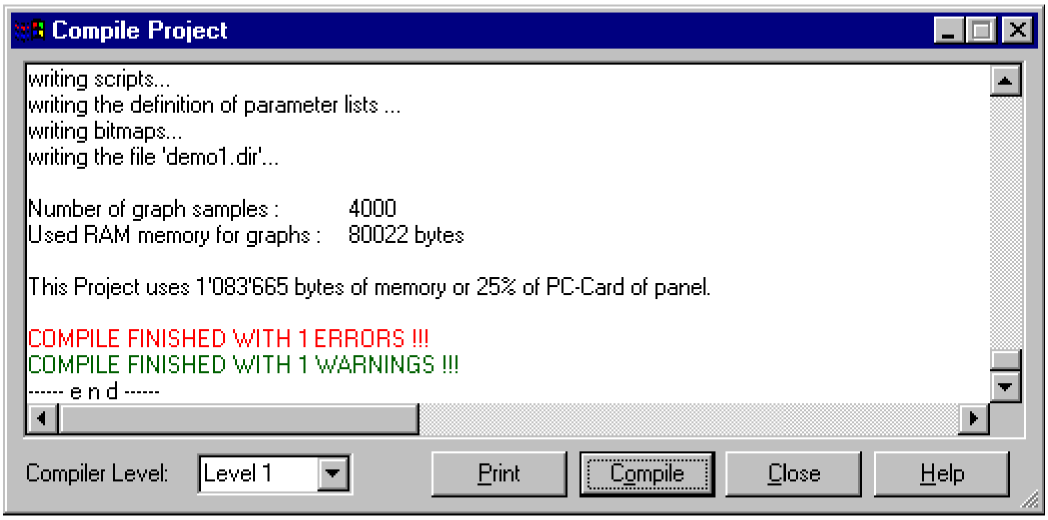
The US date and time On/Off special function allows either US time format or 24 hour time display to be selected. In the US time format, day and month are reversed, and the hours are only displayed as 1..12 with am/pm.

See also Summer time On/Off

11 Compiling

11.1 Compiling

Each project that was created with GALILEO must be compiled before transferring it to the Flash card.



```
writing scripts...
writing the definition of parameter lists ...
writing bitmaps...
writing the file 'demo1.dir'...

Number of graph samples :        4000
Used RAM memory for graphs :    80022 bytes

This Project uses 1'083'665 bytes of memory or 25% of PC-Card of panel.

COMPILE FINISHED WITH 1 ERRORS !!!
COMPILE FINISHED WITH 1 WARNINGS !!!
------ e n d ------
```

Clicking the Compile button starts the compiler run in which all data belonging to the project is compiled automatically. During the compiler run error messages are output that are processed in real-time by the compiler. These error messages can be printed out by clicking the Print button. Errors are also displayed if found. The project is always compiled in its entirety. A summary is always made at the end of a compiler run.

There are two kinds of error messages:

ERROR
Incorrect data, incorrect settings or missing files that may cause malfunction.

WARNINGS
Settings that do not cause malfunctions but which may be necessary to execute the set function properly.

When the compiler run is successfully completed, the required memory is displayed on the Flash card and the percentage of occupied space on the Flash card. If errors are detected during a compiler run, the number of these errors is displayed.

This window does not have to be closed to rectify any errors. It can also be minimized using the 🗕 button. This ensures that information in the list is not lost.

Note:
Double-clicking an error or a warning will open the error concerned.
For example, Properties dialog, Script, Mask
Press F4 to select the next error/warning and Shift F4 to select the previous error/warning.

Note:
A runtime code is always created, also if errors are found. It is not advisable, however, to use this runtime code on the MMI since unexpected malfunctions may occur.

Compiler Level

With rising level more outputs are visible in the compiler window.

12 Project Transfer

12.1 Project Transfer (Local/FTP)

12.1.1 Project Transfer

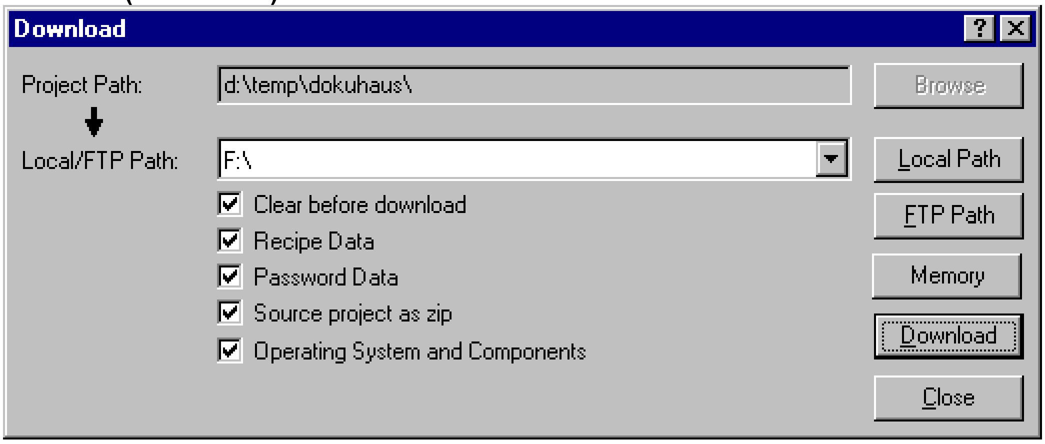
Once the compiler run is successfully completed the project can be transferred to the MMI. This copy operation can be made directly to a Flash card inserted in the PC, via a FTP connection to a Flash card inserted in the MMI panel or via a serial interface to the MMI. Depending on the panel type only certain possibilities are available.

The destination path must be a drive in which a Flash card has been fitted.

A project must be compiled for it to be able to run on an MMI. There is consequently always a "source" and a "runtime code" project. The "runtime code" is required by the GRS or the GPI and the GALILEO design software uses the "source project".

12.1.2 Download (Local/FTP)

Download (Flash Card)



Download

Project Path: d:\temp\dokuhaus\

Local/FTP Path: F:\

☑ Clear before download
☑ Recipe Data
☑ Password Data
☑ Source project as zip
☑ Operating System and Components

Project Path

Path specification in which the loaded project is located. This path must not be changed in this dialog - the path of the loaded project is displayed automatically.

Local/FTP Path

This combo box displays the already used local paths or FTP connections. For new paths or connections use Local Path or FTP Path.

Note:
Only MMI panel with an ethernet interface support FTP connections. Also the FTP server application (FTPSVR.EXE) have to be started on the panel.

The following directory structure is generated on the Flash card:

\APPL	Project files
\BACKUP	Source files of the project
\RUNTIME	GRS files (are automatically updated if necessary, e.g. with new GRS versions)
\DATA	Files are not affected by the transfer of a project.
\OS	Operating system

Clear before download

Before transferring a project all files are deleted in the path "APPL\" and "BACKUP\" on the Flash card. The BACKUP\ directory only exists if the source project is on the Flash card.

This is only necessary if a new project is transferred. In this way files that are old or no longer required are removed, thus avoiding the possibility of any conflicting data.

If the project is new

Include Recipe Data

If this option is selected the recipe files (*.TAB, *.ACT) are copied from the DATA subdirectory during the transfer. These files only exist if the Recipe Data Recipe Data is transferred with Upload Data to the PC.

Include Password Data

If this option is selected the password file (*.PWM) is also transferred from the DATA subdirectory to the Flash card, i.e. the password settings on the Flash card are overwritten.

If this option is not selected, the password file is only copied to the Flash card if there is no password file with the file name (project name.PWM) in the DATA subdirectory on the Flash card.

This means that this option only needs to be selected if the password settings of a particular project with Galileo have changed.

Operating System and Components

Only applies to CE devices.

If this option was selected, all active components that are defined in the '<Panel>.ini' file will be transferred. This file contains different components, with the relevant files, source directory and destination directory for each component.

Source Project as zip

All source project files are packed into a Zip file, which will then transfer. You can protect the this file from access and alteration by third parties. The dialog to input the password is shown at start the download.

Memory

Calculate the the storage requirement on the destination path.

Download

Clicking this button starts the download.

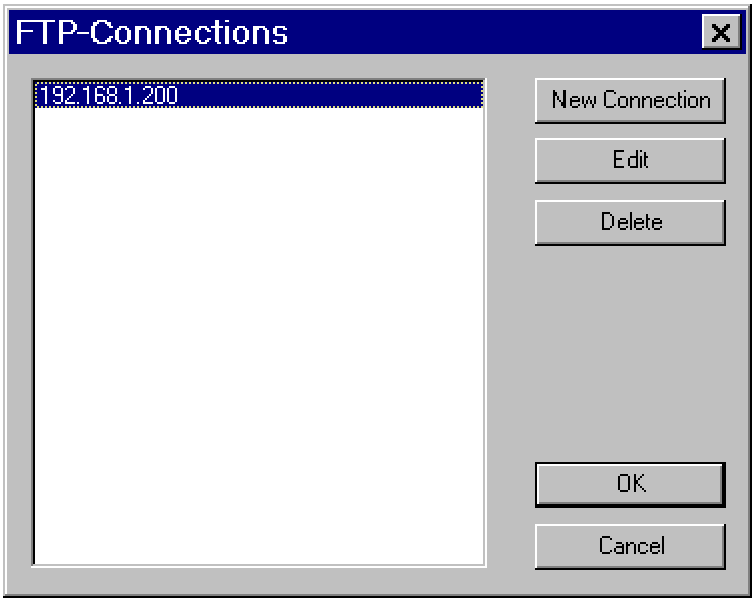
Local Path

This button can be used to select a local path or directory.

Note:
The root directory of the Flash card (e.g. E:\) must always be defined so that the project can be transferred.

FTP Path

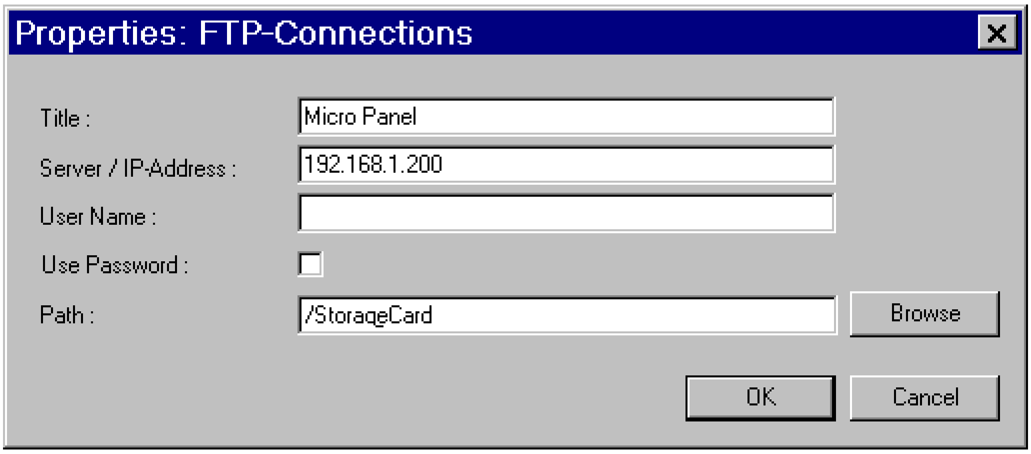
Clicking this button starts the following dialog to edit the property of a FTP connection.


FTP-Connections

192.168.1.200

Already defined FTP connections will be displayed. Use the buttons "New Connection" or "Edit" to modify or create a FTP connection. The following dialog will be displayed.

FTP-Connection


Properties: FTP-Connections

Title : Micro Panel

Server / IP-Address : 192.168.1.200

User Name :

Use Password : □

Path : /StorageCard

Title: Name of the FTP connection

Server / IP-Address: The IP-Address or network name of the MMI panel
The panel displays the address and name on startup.

User Name: User name for the FTP server access (at this time not used)

Use Password: Password for the FTP connection used – yes/no (at this time not used):

If this option is selected, a password is necessary for the FTP data transfer.

Path: Directory on the MMI panel: normally "StorageCard" The directory "StorageCard" does contain the files and directories of the Flash card inserted in the MMI panel (see also note below).

Browse: Clicking this button to browse through the directories off the MMI panel. This requires a successfully FTP connection with the settings above.

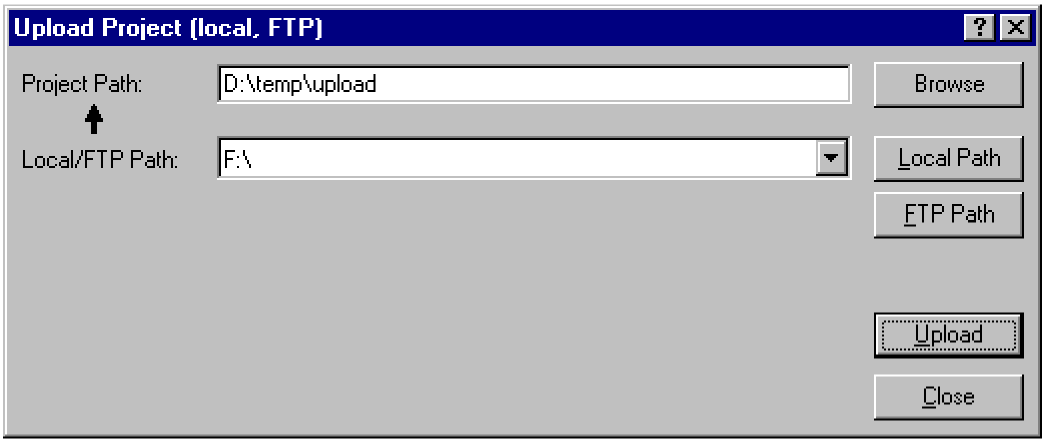
Note:
Via a FTP connection to the MMI panel the complete directory tree will be displayed. The directory named "StorageCard" represent the Flash card. With two plugged Flash cards the directory "StorageCard" represents the card in Slot A and "StorageCard2" the card in Slot B.

See also the chapter Ethernet Interface in GRS.HLP.

12.1.3 Upload Project

Upload Project

To execute this function a loaded project must first be closed.



Project Path: D:\temp\upload

Local/FTP Path: F:\

Project Path

Defines the directory in which the transferred (upload) project is to be saved.

The directory structure in the project path and on the Flash card is the same.

Local/FTP Path

This combo box displays the already used local paths or FTP connections. For new paths or connections use Local Path or FTP Path.

Note:
Only MMI panel with an ethernet interface support FTP connections. Also the FTP server application (FTPSVR.EXE) have to be started on the panel.

See also Local Path and FTP Path in chapter Download (Flash Card)

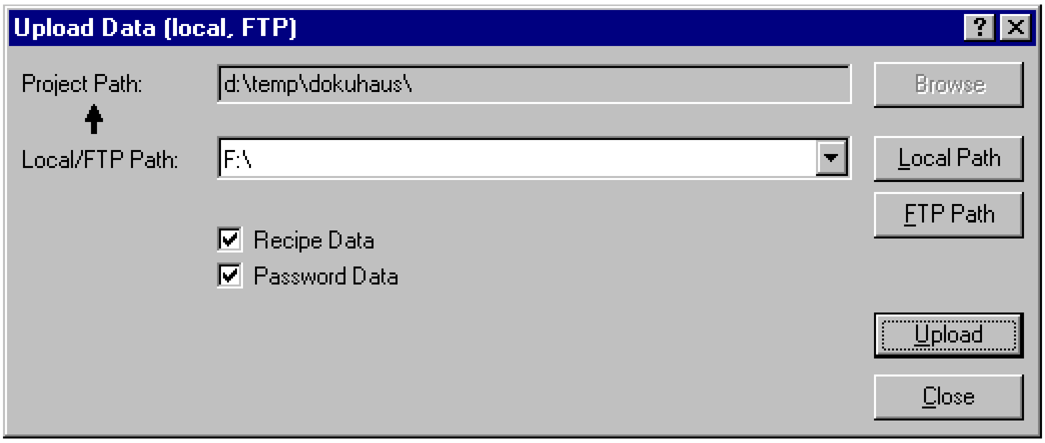
Upload

Clicking this button starts the upload.

12.1.4 Upload Data

Upload Data

This function is only possible if a project is opened.



Upload Data (local, FTP)

Project Path: d:\temp\dokuhaus\

Local/FTP Path: F:\

☑ Recipe Data

☑ Password Data

Project Path

Defines the directory in which the current project is saved. This path cannot be changed - the path of the loaded project is shown automatically.

Local/FTP Path

This combo box displays the already used local paths or FTP connections. For new paths or connections use Local Path or FTP Path.

Note:
Only MMI panel with an ethernet interface support FTP connections. Also the FTP server application (FTPSVR.EXE) have to be started on the panel.

See also Local Path and FTP Path in chapter Download (Flash Card)

Recipe Data

This option allows the recipe data (files *.TAB, *.ACT) of all recipe objects to be copied to the DATA subdirectory in the project directory.

These files can then be transferred to the Flash card with a Download (Flash card) using the Include Recipe Data attribute. This therefore allows the data of all recipe entries for a particular recipe object to be copied to the Flash card.

Password Data

This option allows the password settings (file *.PWM) to be copied from the Flash card to the DATA subdirectory in the project directory.

These files can then be transferred to the Flash card with a Download (Flash card) using the Include Password Data attribute. In this way the password settings on the Flash card are overwritten during a download.

Upload

Clicking this button starts the upload.

13 Tools

13.1 Testing the Project

The "**Galileo** Project **Inspector** (GPI)" program is used for testing the project on the PC. All functions of the GRS runtime program are supported.

Note:
Different special functions have no function on the PC, such as LCD screen contrast adjustment Contrast +, Contrast -.

You can start or quit the GPI program as follows:

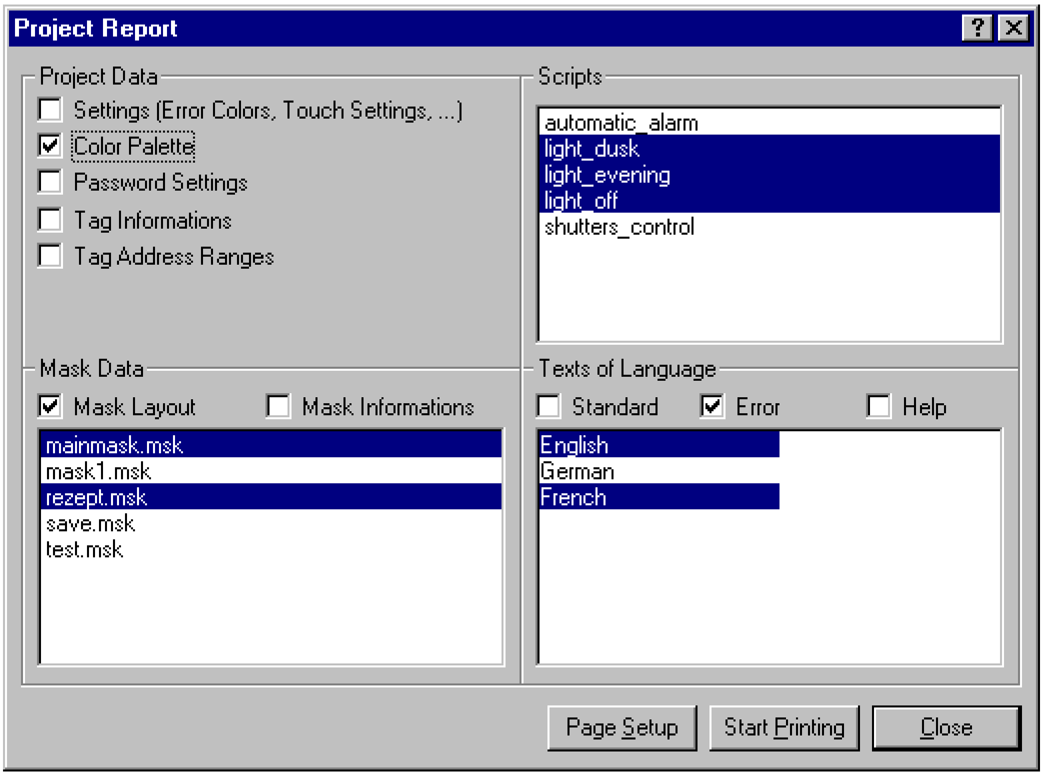
- Start the GPI program via "**Start Project Inspector**" in the "**Build**" menu or via the button in the Toolbar "Standard".
- Quit the test on the PC by pressing the "Q" key, the ☒ button inside the window or via the System menu.

Further information the GPI program is provided in the GRS.HLP documentation.

13.2 Project Report

13.2.1 Project Report

This dialog box allows the printing out of all project settings.


Project Report

Project Data
☐ Settings (Error Colors, Touch Settings, ...)
☑ Color Palette
☐ Password Settings
☐ Tag Informations
☐ Tag Address Ranges

Scripts
automatic_alarm
light_dusk
light_evening
light_off
shutters_control

Mask Data
☑ Mask Layout ☐ Mask Informations
mainmask.msk
mask1.msk
rezept.msk
save.msk
test.msk

Texts of Language
☐ Standard ☑ Error ☐ Help
English
German
French

Settings (Error Colors, Touch Settings, ...)

Select this option to print out the Project Settings.

Color Palette

Select this option to print out the Color Palette.

Password Settings

Select this option to print out the Password Settings.

Tag Information

Select this option to export the tag data in a text file.

See also Tag Information

Tag Address Ranges

Select this option to export the tag address ranges in a text file.

See also Tag Address Ranges

Scripts

The selected Scripts are exported to a text file.

Mask Layout

Select this option to create printouts of the selected masks.

Mask Information

Select this option to export the mask data of the selected mask in text file.

See also Mask Information

Standard Text

Select this option to print out the standard texts of the selected languages.

See also Standard Text

Error Text

Select this option to print out the error texts of the selected languages.

See also Error Text

Help Text

Select this option to print out the Help texts of the selected languages.

See also Help Text

Page Setup

Click this button to change the printer parameters such as page margins etc.

Print

Click this button to execute the print job for the selected options.

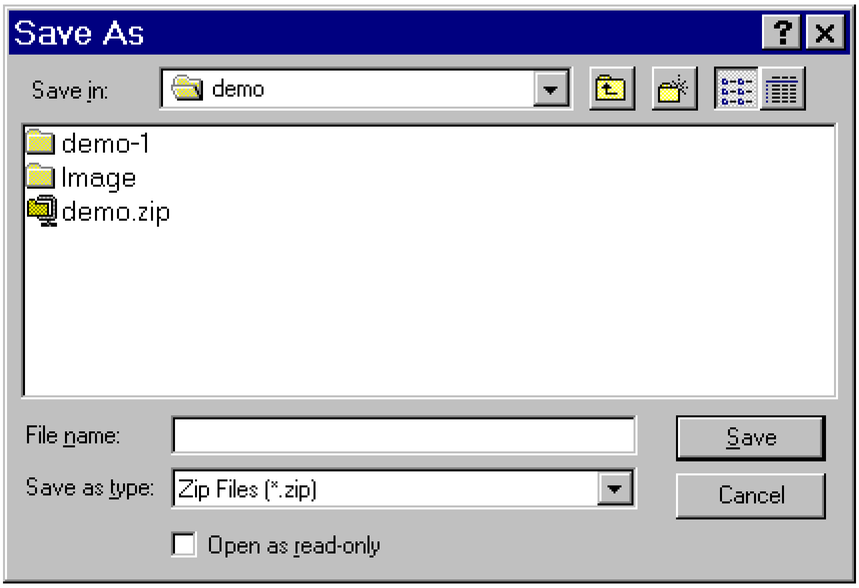
13.3 Project Backup

13.3.1 Project Backup

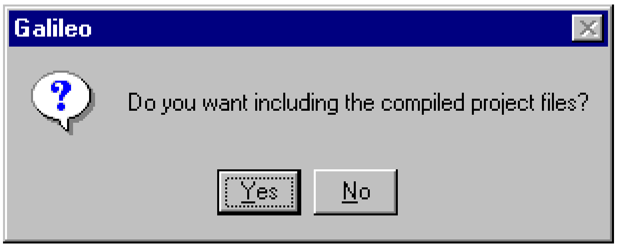
When a project is archived all the project files are compressed and stored in an archive file.

This archive file can be unpacked using the Project Restore function. In this case, all the project files are copied to a selected directory.

After this function has been selected, the following dialog will appear for selecting an archive file in ZIP format.



Leaving the "Save As" dialog by clicking "Save" will cause the following dialog to appear:



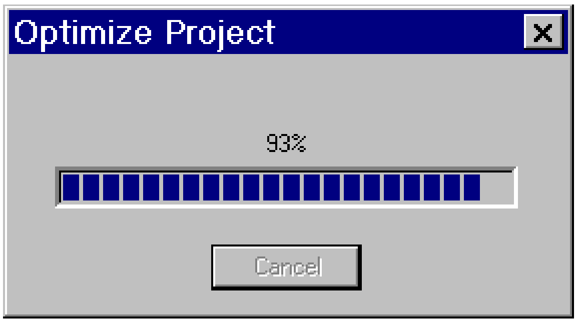
Do you want including the compiled project files?

Click "**Yes**" to save the compiled project data as well, click "**No**" to compress only the source project in the archive file.

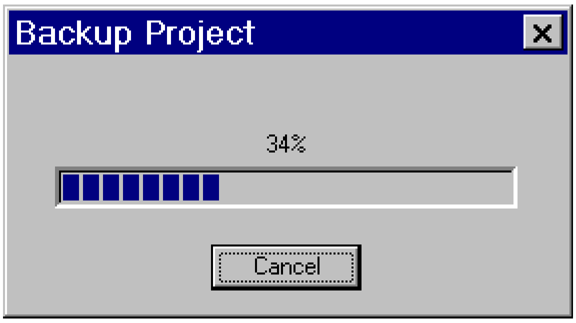
Refer to chapter Project Transfer to a Flash-Card for a more detailed description of the "compiled project data" and "source project".

The following two dialogs will appear when you quit the Save As dialog by clicking the Save button:

Dialog during project optimization



Dialog during archiving of project files:



13.4 Project Backup and Send

13.4.1 Project Backup and Send

When a project is archived or sent, all project files are compressed and saved in an archive file. An e-mail with different version information is then also generated with this archive file.

See also Project Backup, Project Restore

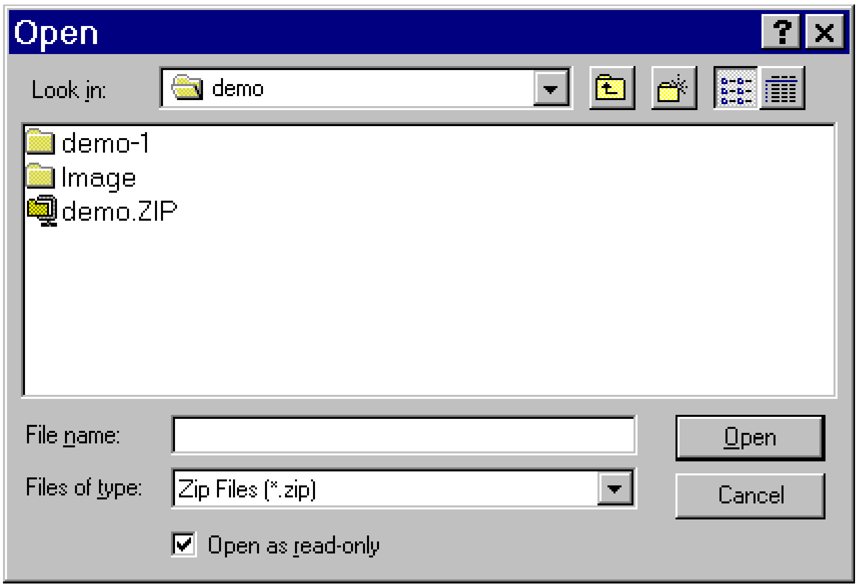
13.5 Project Restore

13.5.1 Project Restore

This function is only accessible if no project is loaded.

If a project was saved in an archive file with Project Backup, the project files can then be copied out of the archive file as required.

The following dialog will appear for selecting the required archive after this function has been selected.



Look in: demo

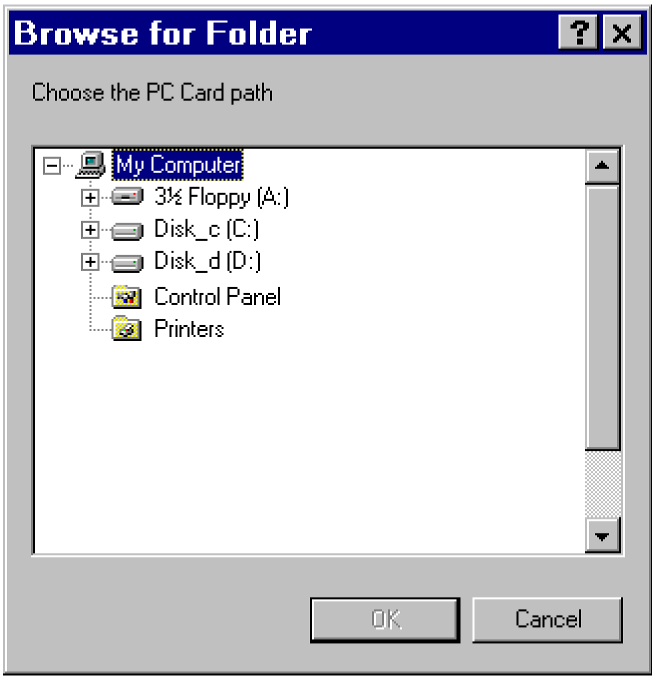
demo-1
Image
demo.ZIP

File name:

Files of type: Zip Files (*.zip)

☑ Open as read-only

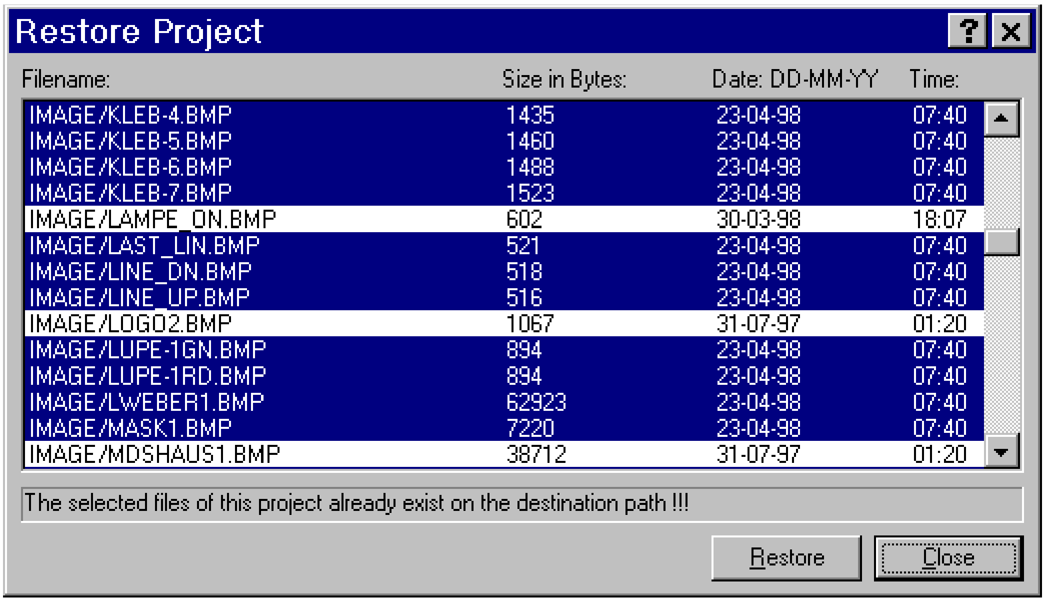
The next dialog is used for selecting a directory for the unpacked project.



Choose the PC Card path

A dialog will then appear showing a list of all project files contained in the archive file opened. All the selected files already exist in the selected destination directory, i.e. these files are overwritten during the copy operation.

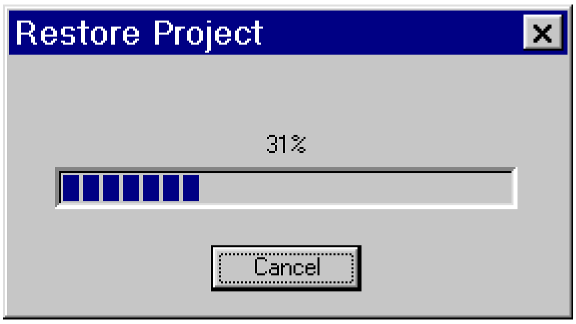
Click Start to copy and overwrite all files. Click Close to quit the dialog without copying files from the archive file.



Filename:	Size in Bytes:	Date: DD-MM-YY	Time:
IMAGE/KLEB-4.BMP	1435	23-04-98	07:40
IMAGE/KLEB-5.BMP	1460	23-04-98	07:40
IMAGE/KLEB-6.BMP	1488	23-04-98	07:40
IMAGE/KLEB-7.BMP	1523	23-04-98	07:40
IMAGE/LAMPE_ON.BMP	602	30-03-98	18:07
IMAGE/LAST_LIN.BMP	521	23-04-98	07:40
IMAGE/LINE_DN.BMP	518	23-04-98	07:40
IMAGE/LINE_UP.BMP	516	23-04-98	07:40
IMAGE/LOGO2.BMP	1067	31-07-97	01:20
IMAGE/LUPE-1GN.BMP	894	23-04-98	07:40
IMAGE/LUPE-1RD.BMP	894	23-04-98	07:40
IMAGE/LWEBER1.BMP	62923	23-04-98	07:40
IMAGE/MASK1.BMP	7220	23-04-98	07:40
IMAGE/MDSHAUS1.BMP	38712	31-07-97	01:20

The selected files of this project already exist on the destination path !!!

The following dialog will appear when project files are being copied from the archive file.



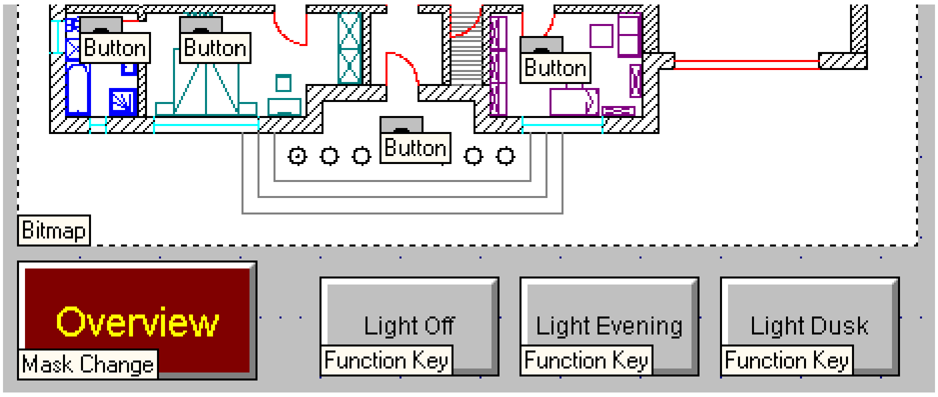
Once the copy operation has been successfully completed, the Open Project dialog will appear in order to load the unpacked project.

13.6 Project Information

13.6.1 Project Information

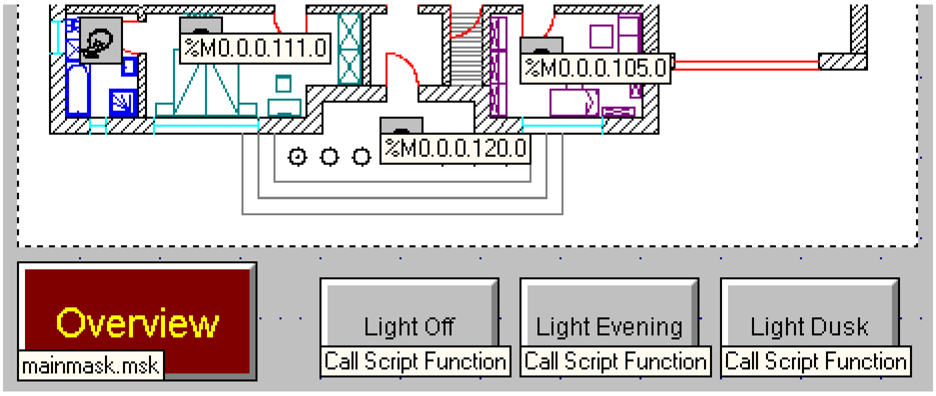
The GALILEO design software provides several possibilities for displaying or printing out information about the project loaded.

13.6.2 Displaying object types



Clicking the button on the Standard icon bar causes small footnotes to appear next to every defined static or dynamic object.

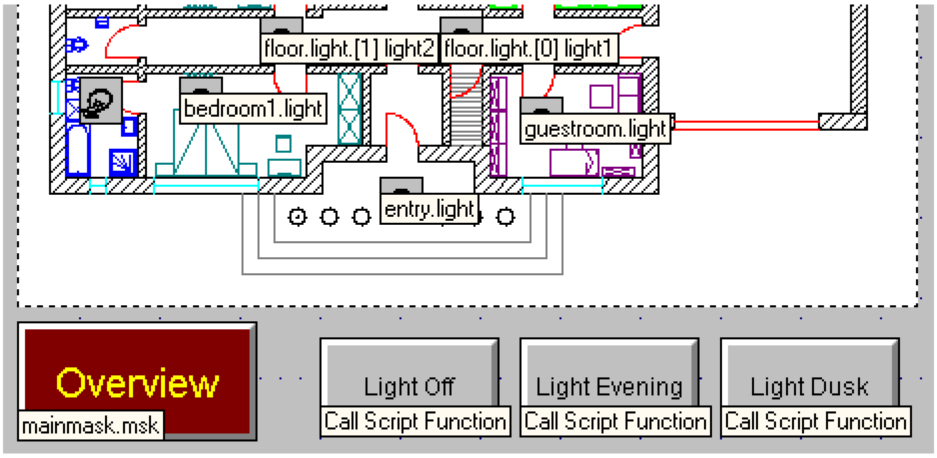
13.6.3 Displaying the PLC address / info



Clicking the button in the Standard toolbar displays the PLC address for each defined object with an assigned tag or data block. If both slots are used, both addresses will be displayed together.

With Function Key Objects the special function name is shown and with Mask Change objects the name of the mask.

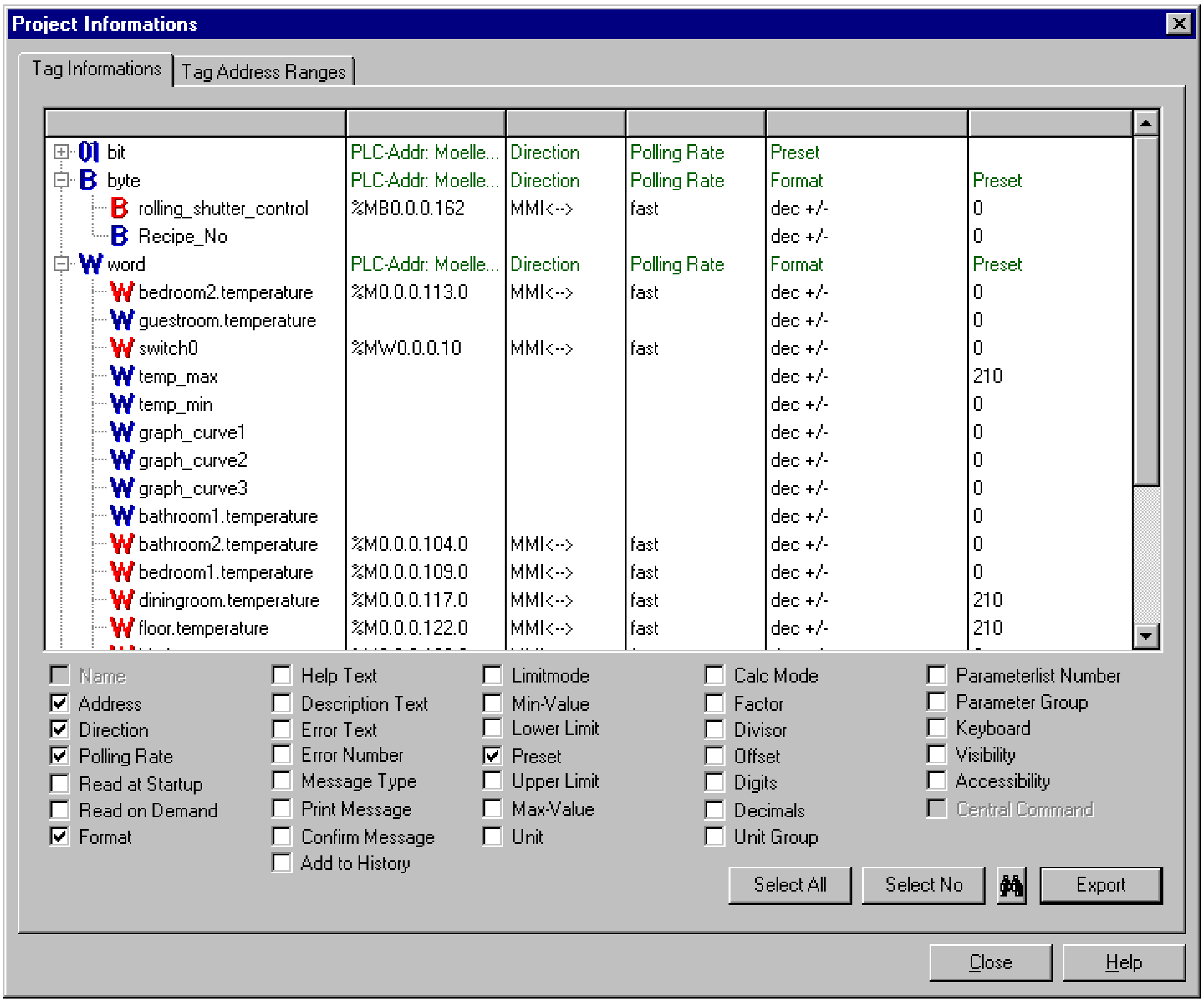
13.6.4 Displaying the Tag Name / Info



Click the button in the "Standard" toolbar to show the name of any tag or data block assigned to every defined object.

With Function Key objects the special function is shown, with Mask Change objects the mask name, and with Recipe objects in Enhanced mode the recipe name.

13.6.5 Tag Information



Project Informations

Tag Informations | Tag Address Ranges

⊞ 01 bit	PLC-Addr: Moelle...	Direction	Polling Rate	Preset	
⊟ B byte	PLC-Addr: Moelle...	Direction	Polling Rate	Format	Preset
B rolling_shutter_control	%MB0.0.0.162	MMI<-->	fast	dec +/-	0
B Recipe_No				dec +/-	0
⊟ W word	PLC-Addr: Moelle...	Direction	Polling Rate	Format	Preset
W bedroom2.temperature	%M0.0.0.113.0	MMI<-->	fast	dec +/-	0
W guestroom.temperature				dec +/-	0
W switch0	%MW0.0.0.10	MMI<-->	fast	dec +/-	0
W temp_max				dec +/-	210
W temp_min				dec +/-	0
W graph_curve1				dec +/-	0
W graph_curve2				dec +/-	0
W graph_curve3				dec +/-	0
W bathroom1.temperature				dec +/-	0
W bathroom2.temperature	%M0.0.0.104.0	MMI<-->	fast	dec +/-	0
W bedroom1.temperature	%M0.0.0.109.0	MMI<-->	fast	dec +/-	0
W diningroom.temperature	%M0.0.0.117.0	MMI<-->	fast	dec +/-	210
W floor.temperature	%M0.0.0.122.0	MMI<-->	fast	dec +/-	210

☐ Name
☑ Address
☑ Direction
☑ Polling Rate
☐ Read at Startup
☐ Read on Demand
☑ Format

☐ Help Text
☐ Description Text
☐ Error Text
☐ Error Number
☐ Message Type
☐ Print Message
☐ Confirm Message
☐ Add to History

☐ Limitmode
☐ Min-Value
☐ Lower Limit
☑ Preset
☐ Upper Limit
☐ Max-Value
☐ Unit

☐ Calc Mode
☐ Factor
☐ Divisor
☐ Offset
☐ Digits
☐ Decimals
☐ Unit Group

☐ Parameterlist Number
☐ Parameter Group
☐ Keyboard
☐ Visibility
☐ Accessibility
☐ Central Command

Select All | Select No | Export

Close | Help

This panel is used to view a list of all tag definitions of the opened project. The check boxes enable particular information to be shown or hidden. The column widths can be modified as required. To do this, use the mouse to move the vertical separator between the column headers. Click the bar above a column to sort the list according to the criteria of the column selected. A small arrow will show the order of the sort. Clicking the bar will toggle the order of sorting between ascending and descending order.

Select All

All possible options are activated.

Select NO

All options are deactivated.

🔍

Searches for a text expression in list.

Export

Export the visible data in a text file. The columns will separate by tabulators.

PLC Address

This column shows the PLC address of the tag.

Data Direction

Shows the Data Direction of addressed tags. Possible directions: MMI <--> (Read&Write), MMI --> (Write) and MMI<-- (Read).

Polling Rate

Shows the Polling Rate of addressed tags.

Read at Startup

With addressed tags indicates whether at startup of the MMI the tag value is to be read from the PLC.

Read on Demand

With addressed tags indicates whether the tag value is read on demand from the PLC.

Format

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the Format of the tag selected. Possible formats: Decimal, Decimal+/-, Hex, Binary, Octal or BCD. This column remains empty for BIT tags.

Help Text

Shows the Help Text defined for this tag.

Description Text

Shows the Description Text defined to this tag.

Error Text

Shows the Error Text defined to this tag.

Error Number

If the tag is an error tag, the Number of the tag will be shown in this column.

Error Type

If the tag is an error tag, the Error Type of the tag will be shown in this column. Possible message types: Warning, Message, and Error.

Print Message

If the tag is an error tag, this will show whether Print Message is activated.

Confirm Message

If the tag is an error tag, this column will show if Confirm Message is activated.

Add to History

If the tag is an error tag, this column will show if the Add Message to History List function is activated.

Limitmode

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the assigned limit mode. Possible modes: Open, Constant, and Dynamic. See also Open_Limits, Constant Limits, Dynamic Limits

Min-Value

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the Minimum Value. If the limit mode is dynamic, this column will show a tag that represents the minimum value.

Lower Limit

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the Lower Limit of the tag selected. If the limit mode is dynamic, this column will show a tag that represents the lower limit.

Preset

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the Preset Value of the tag selected.

Upper Limit

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the Upper Limit of the tag selected. If the limit mode is dynamic, this column will show a tag that represents the upper limit.

Max-Value

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the Maximum Value. If the limit mode is dynamic, this column will show a tag that represents the maximum value.

Unit

If the tag is a value tag (BYTE, WORD, DWORD), this column will show Units and Conversion Factors of the tag selected. Both units of measure of tags that belong to a unit of measure group are displayed.

Calc Mode

If the tag is a value tag (BYTE, WORD, DWORD), this column will show the Conversion Mode of the tag selected. Possible conversion factors: mmi=plc, mmi=plc*a/b+c and mmi=(plc+c)*a/b.

Factor

In this column the factor a of the conversion is shown between the PLC and MMI value.

See also Conversion Mode and Fields a b c in the dialog Units and Conversion Factors

Divisor

In this column the divisor b of the conversion is shown between the PLC and MMI value.

See also Conversion Mode and Fields a b c in the dialog Units and Conversion Factors

Offset

In this column the offset c of the conversion is shown between the PLC and MMI value.

See also Conversion Mode and Fields a b c in the dialog Units and Conversion Factors

Digits

This column shows the number of digits used for representing this tag on the MMI.

See also chapter Digits in the dialog Units and Conversion Factors

Decimals

This column shows the number of decimal places for representing this tag on the MMI.

See also chapter Decimals in the dialog Units and Conversion Factors

Unit Group

This column shows the Unit Groups. Up to 10 different groups can be defined.

Number (Parameter List)

This column shows the Number for a parameter list entry. Each tag can be assigned a number by which the entries of a Parameter List can be sorted.

Group (Parameter List)

This column shows the Parameter Groups. Each tag must be assigned to a parameter group since only groups and not individual tags can be added to and removed from the parameter list.

Keyboard (Parameter List)

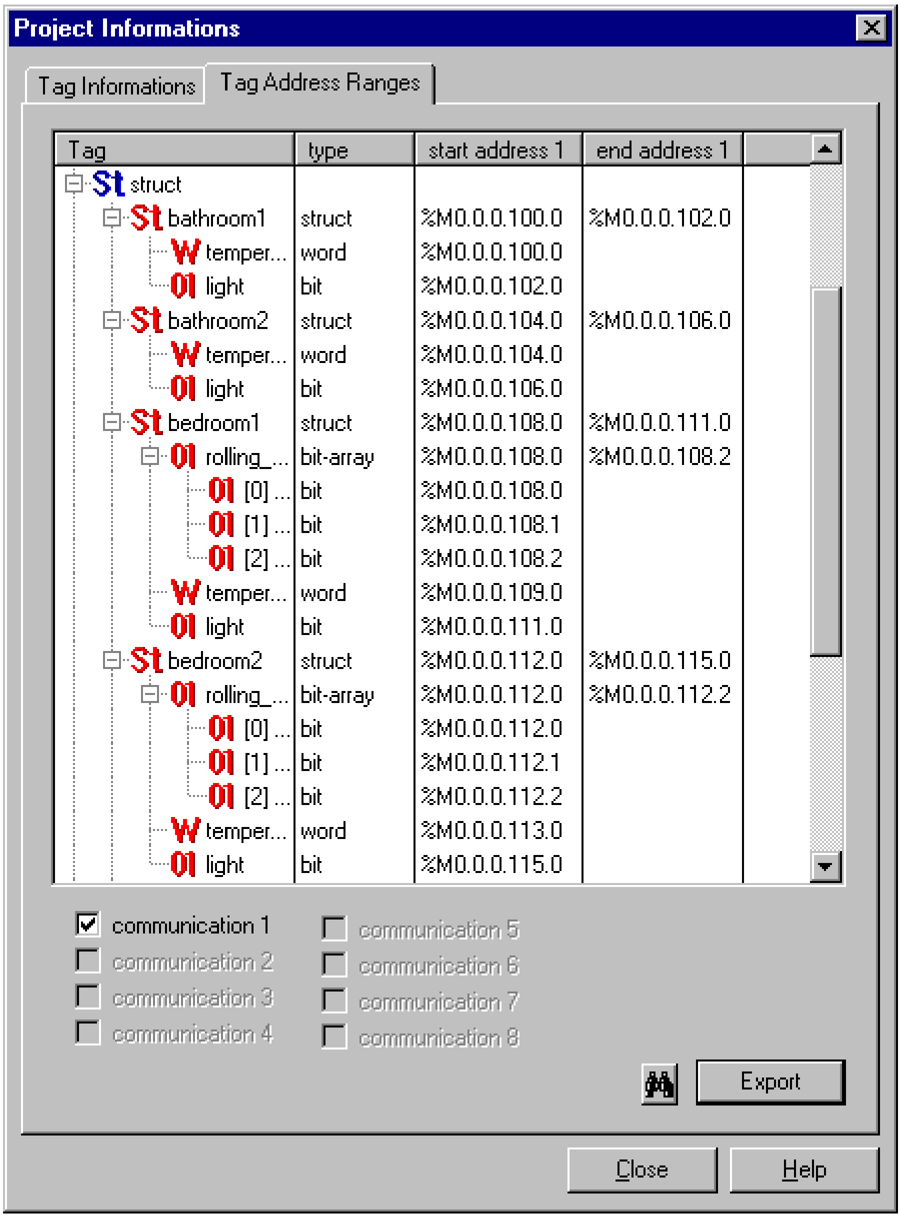
This column shows the Keyboards by which the parameter list entry can be changed.

See also User Defined Keyboards

Central Command

Only relevant for EIB. See Central Commands

13.6.6 Tag Address Ranges



Project Informations

Tag Informations | Tag Address Ranges

Tag	type	start address 1	end address 1
St struct			
St bathroom1	struct	%M0.0.0.100.0	%M0.0.0.102.0
W temper...	word	%M0.0.0.100.0	
01 light	bit	%M0.0.0.102.0	
St bathroom2	struct	%M0.0.0.104.0	%M0.0.0.106.0
W temper...	word	%M0.0.0.104.0	
01 light	bit	%M0.0.0.106.0	
St bedroom1	struct	%M0.0.0.108.0	%M0.0.0.111.0
01 rolling_...	bit-array	%M0.0.0.108.0	%M0.0.0.108.2
01 [0] ...	bit	%M0.0.0.108.0	
01 [1] ...	bit	%M0.0.0.108.1	
01 [2] ...	bit	%M0.0.0.108.2	
W temper...	word	%M0.0.0.109.0	
01 light	bit	%M0.0.0.111.0	
St bedroom2	struct	%M0.0.0.112.0	%M0.0.0.115.0
01 rolling_...	bit-array	%M0.0.0.112.0	%M0.0.0.112.2
01 [0] ...	bit	%M0.0.0.112.0	
01 [1] ...	bit	%M0.0.0.112.1	
01 [2] ...	bit	%M0.0.0.112.2	
W temper...	word	%M0.0.0.113.0	
01 light	bit	%M0.0.0.115.0	

☑ communication 1
□ communication 2
□ communication 3
□ communication 4
□ communication 5
□ communication 6
□ communication 7
□ communication 8

This panel is used to view a list of all tag definitions of the opened project. The check boxes enable particular address information to be shown or hidden. The column widths can be modified as required. To do this use, the mouse to move the vertical separator between the column headers. Click the bar above a column to sort the list according to the criteria of the column selected. A small arrow will show the order of the sort. Clicking the bar will toggle the order of sorting between ascending and descending order.

Searches for a text expression in the list.

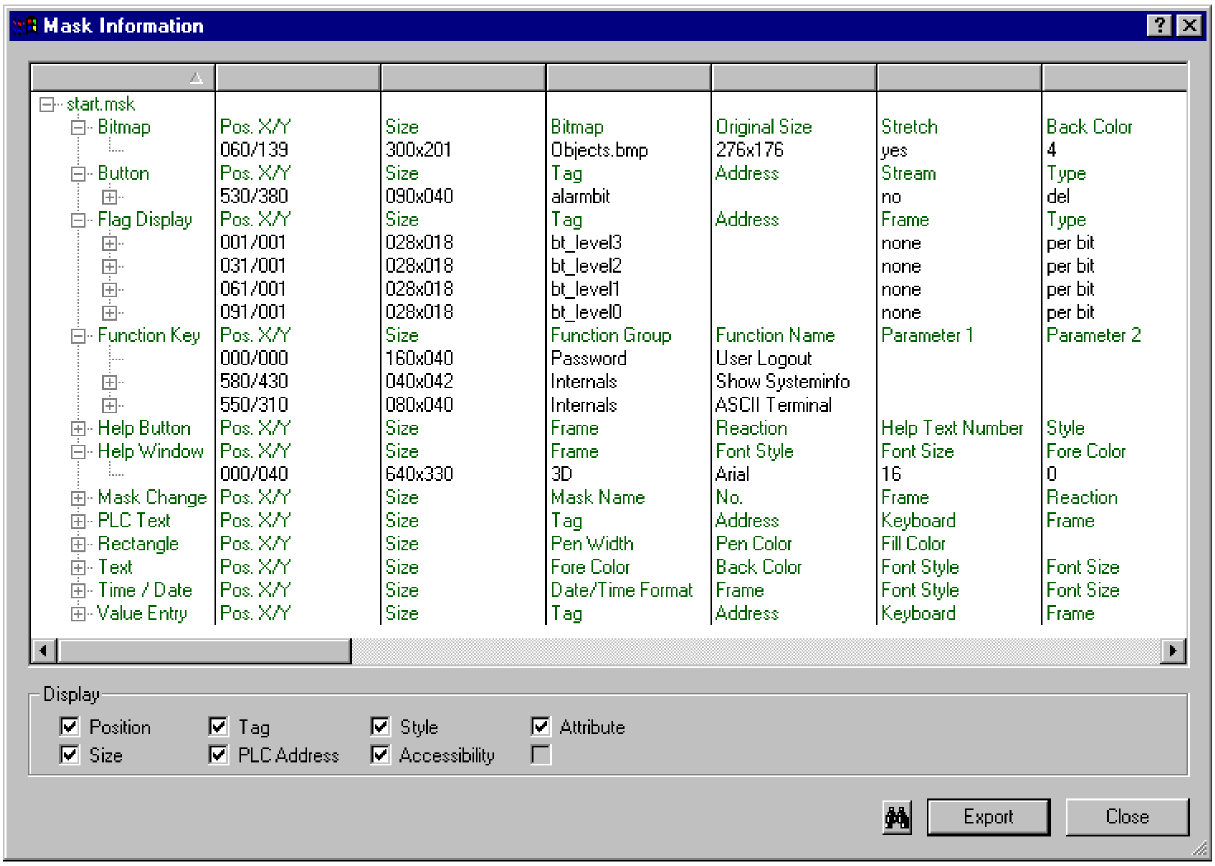
Export

Export the visible data in a text file. The columns will separate by tabulators.

Communication 1..8

These options enable the address ranges for a communication to be shown or hidden.

13.6.7 MASK INFORMATION



Mask Information

⊟ start.msk						
⊟ Bitmap	Pos. X/Y	Size	Bitmap	Original Size	Stretch	Back Color
	060/139	300x201	Objects.bmp	276x176	yes	4
⊟ Button	Pos. X/Y	Size	Tag	Address	Stream	Type
⊞	530/380	090x040	alarmbit		no	del
⊟ Flag Display	Pos. X/Y	Size	Tag	Address	Frame	Type
⊞	001/001	028x018	bt_level3		none	per bit
⊞	031/001	028x018	bt_level2		none	per bit
⊞	061/001	028x018	bt_level1		none	per bit
⊞	091/001	028x018	bt_level0		none	per bit
⊟ Function Key	Pos. X/Y	Size	Function Group	Function Name	Parameter 1	Parameter 2
	000/000	160x040	Password	User Logout		
⊞	580/430	040x042	Internals	Show Systeminfo		
⊞	550/310	080x040	Internals	ASCII Terminal		
⊞ Help Button	Pos. X/Y	Size	Frame	Reaction	Help Text Number	Style
⊟ Help Window	Pos. X/Y	Size	Frame	Font Style	Font Size	Fore Color
	000/040	640x330	3D	Arial	16	0
⊞ Mask Change	Pos. X/Y	Size	Mask Name	No.	Frame	Reaction
⊞ PLC Text	Pos. X/Y	Size	Tag	Address	Keyboard	Frame
⊞ Rectangle	Pos. X/Y	Size	Pen Width	Pen Color	Fill Color	
⊞ Text	Pos. X/Y	Size	Fore Color	Back Color	Font Style	Font Size
⊞ Time / Date	Pos. X/Y	Size	Date/Time Format	Frame	Font Style	Font Size
⊞ Value Entry	Pos. X/Y	Size	Tag	Address	Keyboard	Frame

Display

☑ Position ☑ Tag ☑ Style ☑ Attribute

☑ Size ☑ PLC Address ☑ Accessibility □

This panel shows all the objects of the current mask of the project. The various columns can be selected or de-selected as required by activating the check boxes accordingly. The width of the columns can be altered as required by using the mouse to move the vertical separators between the various column headers. This list shows static and dynamic objects.

Searches for a text expression in the list.

Export

Export the visible data in a text file. The columns will separate by tabulators.

Object type

This column shows the type of object.

The designations, such as rectangle, circle, button, selector switch, recipe etc., are shown.

This information is the same as the information in the footnote that can be shown (Displaying object types).

Position

This column shows the position of the object in terms of X and Y coordinates. The entry value is given in pixels (X:xxx Y:yyy).

Size

This column shows the size of the object in the directions X and Y. The entry value is given in pixels (x times y).

Tag

With dynamic objects this column shows the tag name that can be used for the object concerned.

With static objects, this column is empty.

PLC Address

With dynamic objects this column shows the PLC address of the tag that is used in the object concerned.

With static and dynamic objects without the assigned tag this column is empty.

Object Style

This column displays the object style of a dynamic object. With static objects, this column is empty. The object style cannot be set for all dynamic objects. It defines whether a color area, text or picture should be shown. For this see the example under "Style" in Mask Change.

Accessibility

This column shows the visibility and accessibility properties of the object. These columns are only shown if these properties are also used.

Attribute

This column displays the object style of the configuration. For a color area this is the color, for text this is the text content and for pictures this is the name of the bitmap file (file name). With static objects the line thickness is also shown (line thickness: Attribute). If an object can have several states, only the attribute of the first state is displayed.

13.6.8 Printing Information

All the information of a list can be printed out. All printouts can be created using the Project Report dialog.

13.6.9 Mask Printout

The current mask can be printed out by clicking the Print menu point in the Mask menu or with the option Mask Layout of the dialog Project Report.

To print all the masks of a project, every mask must be opened and printed out via the Print button.

14 Special Functions

14.1 Overview

14.1.1 Overview

Special functions are used by the Function Key object. These functions are integrated in the GRS firmware and cannot be extended or modified by the user.

The designations of these functions are always in English.

These functions have been divided into functional groups since they can be very large over the course of time:

- Info Displays
- Internal Functions
- Communication
- Keyboards
- Language Selection
- Printer Functions
- Character Entry
- Password Functions
- Unit of Measurement Functions
- Recipe Functions
- Graph Start/Stop Functions
- Graph Functions
- Parameter List Functions

14.1.2 Initiating functions from the PLC

Certain special functions can be initiated from the PLC.

The initiation from the PLC is implemented as follows:

- Transfer the special function number to the 4th data word of the control data block
- Depending on the special function required transfer a value (parameter of the function) to the 5th data word of the control data block
- Transfer the recipe object and the recipe entry number to the 6th data word of the control data block with special functions of the group Recipe Functions.
- With special functions with an ON/OFF status set bit 14 of the 3rd data word of according to the status required.
- Set bit 15 of the 3rd data word of the control data block so that the function is executed (see section "Control data block" in GRS.HLP).

Further functions like Mask Change, "**Recipe Change**" etc. can be initiated from the PLC, too.

See Recipe external changeable, the chapters "Control data block" and "Initiating functions from the PLC" in GRS.HLP

14.2 Info Displays

14.2.1 Info Displays

The following special functions are used to display device and project specifications.

See also Show Systeminfo

see also:

Bitmap Memory

Cache Blocks

Cache Hits

COM Board Slot 0..3

Flash Memory Size

Galileo Compiler Version

GRS Version

Hardware Version

Mask Name

No. of Compilings

Operating System Version

PLC Name Slot 0..3

Project Language

Project Name

Project Size

Project Time/Date

Serial Number

System Language File

Total Cache Memory Size

Touch Channel Count (X/Y)

Touch Contr. Version

Touch Delay Time

Touch Double Click Time

Unused Flash Memory

Unused RAM Memory

14.2.2 Bitmap Memory

Number of the Function	: 2583 (A17h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Required memory for bitmap files of the project.

14.2.3 Cache Blocks

Number of the Function	: 2587 (A1Bh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Display of the number of cache blocks available and used for the bitmap display of the current project. The bitmap cache is used for speeding up the display of bitmaps.

See also Cache Hits, Show Systeminfo

14.2.4 Cache Hits

Number of the Function	: 2588 (A1Ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Displays how many times the bitmap cache is used since the device was started. The bitmap cache is used for speeding up the display of bitmaps.

See also Cache Blocks, Show Systeminfo

14.2.5 COM Board Slot 0..3

Numbers of the Function	: Slot 0:2568 (A08h)
	: Slot 1:2569 (A09h)
	: Slot 2:2570 (A0Ah)
	: Slot 3:2571 (A0Bh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Type and version of the communication interface card fitted in Slot 0 or Slot 1.

14.2.6 Flash Memory Size

Number of the Function	: 2577 (A11h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Hardware total memory capacity of the Flash card or the onboard Flash memory.

14.2.7 Galileo Compiler Version

Number of the Function	: 2581 (A15h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

The compiler versions identify the data structures of the different Galileo versions. The software will not run correctly without the correct compiler version.

14.2.8 GRS Version

Number of the Function	: 2560 (A00h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

GRS runtime software version. This does not have to be identical to the Galileo version.

14.2.9 Hardware Version

Number of the Function	: 2576 (A10h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Hardware Version of the MMI Panel

14.2.10 Mask Name

Number of the Function	: 2688 (A80h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Displays the current mask name.

14.2.11 No. of Compilings

Number of the Function	: 2580 (A14h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

The number of times the project was compiled. Each compilation increments the counter. This counter can be used for comparing with other projects.

14.2.12 Operating System Version

Number of the Function	: 2689 (A81h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Displays the firmware version

14.2.13 PLC Name Slot 0..3

Numbers of the Function	: Slot 0:2572 (A0Ch)
	: Slot 1:2573 (A0Dh)
	: Slot 2:2574 (A0Eh)
	: Slot 3:2575 (A0Fh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Name and version of the PLC connected to Slot 0 or 1, as per the selection made in the section Selecting the PLC.

14.2.14 Project Language

Number of the Function	: 2579 (A13h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Currently loaded project language. Up to 100 project languages can be defined. The special function Change to language 00..99 can be used to change the language.

14.2.15 Project Name

Number of the Function	: 2561 (A01h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Name of project defined in Galileo.

14.2.16 Project Size

Number of the Function	: 2562 (A02h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Memory required for the loaded project

- Including the source project data if this was transferred to the Panel
- Excluding the runtime program

14.2.17 Project Time/Date

Number of the Function	: 2563 (A03h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Date and time of project compilation.

14.2.18 Serial Number

Number of the Function	: 2565 (A05h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

The serial number of the Touch Panel has the following meaning:

Key: YYWWTTXXXX

YY	: Year of production
WW	: Week of production
TT	: Model group
XXXX	Consecutive number

14.2.19 System Language File

Number of the Function	: 2564 (A04h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Loaded file containing all system message texts. The system messages appear in red and green bars. The text can be displayed in six different languages:

GRS_LOG.GER	German
GRS_LOG.ENG	English
GRS_LOG.ITA	Italian
GRS_LOG.FRA	French
GRS_LOG.SPA	Spanish
GRS_LOG.USR	User-defined

In addition to the texts defined in these ASCII files, it is also possible to define how long the messages are displayed and which messages are to be stored in the History.

14.2.20 Total Cache Memory Size

Number of the Function	: 2586 (A1Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Shows the total size of all Cache Blocks. The bitmap cache is used for speeding up the display of bitmaps.

See also Cache Hits

14.2.21 Touch Channel Count (X/Y)

Number of the Function	: 2566 (A06h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Number of infrared channels on X and Y axes. Each channel has one send and one receive diode.

14.2.22 Touch Contr. Version

Number of the Function	: 2567 (A07h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Version of the touch controller software. Touch events are evaluated via this software.

The panel must be returned to the manufacturer for updates.

14.2.23 Touch Delay Time

Number of the Function	: 2584 (A18h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Time in seconds by which the function of an object with an activated delay attribute is executed when touched.

Refer to the section Touch for more detailed information.

14.2.24 Touch Double Click Time

Number of the Function	: 2585 (A19h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Time in seconds between clicks for a double-click.

Refer to the section Touch for more detailed information.

14.2.25 Unused Flash Memory

Number of the Function	: 2578 (A12h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Unused memory on the flash card or onboard flash chips.

14.2.26 Unused RAM Memory

Number of the Function	: 2582 (A16h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Currently available (unused) RAM memory.

14.3 Internal Functions

14.3.1 Internal Functions

Internal functions are functions that are executed inside the MMI. These functions have no effect on the communication and do not involve any data transfer.

see also:

ASCII Terminal

ASCII Terminal (userdef. Keyb.)

Backlight Off

Backup Recipe

Beep

Boot System

Brightness 0%

Brightness 40%

Brightness 60%

Brightness 80%

Brightness 100%

Call Script Function

Call Script Function on Mask Entry

Call 2 Script Functions

Clear all Histories

Clear History in Mask

Clear System History

Contrast -

Contrast +

Contrast Middle

Contrast Save

Error Autoscroll On/Off

Error confirm

Error confirm (actual window)

Error confirm all

Error first line

Error help

Error last line

Error line down

Error line up

Error page down

Error page up

Execute

GPI – Frame On/Off

GPI – About Dialog

IP Address 0..3

IP Gateway 0..3

IP Mask 0..3

Last mask

Save Error History as File

Save Mask as Bitmap

Save System History as File

Set day

Set hour

Set minute

Set month

Set second

Set year

Set Touch Disable

Show History On/Off

Show Systeminfo

Show Sys. History On/Off

Shut down

Summer time On/Off

System language English

System language French

System language German

System language Italian

System language Spanish

System language User
US date and time On/Off

14.3.2 ASCII Terminal

Number of the Function	: 200 (C8h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables ASCII characters to be sent via the SYSTEM or PROG PORT of the MMI device. Starting this function will call up the alphanumeric keyboard Alpha numeric for entering the ASCII characters required.

Use the **RETURN** key to transfer the entered ASCII characters via the serial interface. The keyboard will remain visible.

The keyboard display will show the following after the transfer:

Response	**Display**
Character <BEL> (07H)	: NOT OK
Character <CR> (0DH) or <LF> (0AH)	: OK
All other characters	: The display shows the received characters

Use the **ESC** button to close the alphanumeric keyboard.

Note:
This function is intended only for PMAC protocols (see also Selecting the PLC).

See also ASCII Terminal (userdef. Keyb.)

14.3.3 ASCII Terminal (userdef. Keyb.)

Number of the Function	: 201 (C9h)
Parameter value (see Function Key)	: User defined keyboards (see User Defined Keyboards)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables ASCII characters to be sent via the SYSTEM or PROG PORT of the MMI device. Starting this function will call up the User Defined Keyboard for entering the ASCII characters required.

Use the **RETURN** key to transfer the entered ASCII characters via the serial interface. The keyboard will remain visible.

The keyboard display will show the following after the transfer:

Response	**Display**
Character <BEL> (07H)	: NOT OK
Character <CR> (0DH) or <LF> (0AH)	: OK
All other characters	: The display shows the received characters

Use the **ESC** button to close the alphanumeric keyboard.

Note:
This function is intended only for PMAC protocols (see also Selecting the PLC).

See also ASCII Terminal

14.3.4 Backlight Off

Number of the Function	: 133 (85h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function allows the backlight of the display to be switched off. The backlight switched on again the first time the MMI is touched. This touch operation will not start any function.

This function can only be used on the Touch Panel.

Note:
The lifespan of the backlight may be damaged if it is switched on and off too frequently. This special function should only be used if the backlight is to be switched off for long periods so that switching it off and on will not have a negative effect on the lifespan.
Reducing the brightness (see, for example, Brightness 40%) always increases the lifespan.

See also Brightness 0%, Brightness 60%, Brightness 80%, Brightness 100%

14.3.5 Backup Recipe

This special function is no longer supported.

Note:
Depending on the type of device used, recipe data can either be read from the Flash card or transferred serially.

14.3.6 Beep

Number of the Function	: 180 (B4h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This special function cannot be used with units not provided with a Flash card.

This function can be used to start an audible signal from the PLC. The frequency and duration of the signal is not adjustable (500 Hz, 100ms).

This function cannot be used on all units (error message in the Galileo compiler).

14.3.7 Boot System

Number of the Function	: 99 (63h)

Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function shuts down the operating system. This means that the communication is aborted, the project is closed and the MMI is restarted.

14.3.8 Brightness 0%

Number of the Function	: 132 (84h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The brightness of the display is reduced.

The current for the backlight is reduced to 0%. This significantly increases the lifespan of the backlight as long as the shutdown duration is not too small.

The setting is also retained after the MMI is switched off.

This function is only possible with units featuring the special display.

See also Backlight Off, Brightness 40%, Brightness 60%, Brightness 80%, Brightness 100%

14.3.9 Brightness 40%

Number of the Function	: 131 (83h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The brightness of the display is reduced.

The current of the backlight is reduced to 40 %. The lifespan of the backlight is considerably increased.

The setting is also retained when the MMI is switched off.

This function can only be used on the panel.

See also Backlight Off, Brightness 0%, Brightness 60%, Brightness 80%, Brightness 100%

14.3.10 Brightness 60%

Number of the Function	: 130 (82h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The brightness of the display is reduced.

The current of the backlight is reduced to 60 %. The lifespan of the backlight is considerably increased.

The setting is also retained when the MMI is switched off.

This function can only be used on the panel.

See also Backlight Off, Brightness 0%, Brightness 40%, Brightness 80%, Brightness 100%

14.3.11 Brightness 80%

Number of the Function	: 129 (81h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The brightness of the display is reduced.

The current of the backlight is reduced to 80 %. The lifespan of the backlight is considerably increased.

The setting is also retained when the MMI is switched off.

This function can only be used on the panel.

See also Backlight Off, Brightness 0%, Brightness 40%, Brightness 60%, Brightness 100%

14.3.12 Brightness 100%

Number of the Function	: 128 (80h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The brightness of the display is reduced.

The current of the backlight is set to 100 %.

The setting is also retained when the MMI is switched off.

This function can only be used on the panel.

See also Backlight Off, Brightness 0%, Brightness 40%, Brightness 60%, Brightness 80%

14.3.13 Call Script Function

Number of the Function	:	181 (B5h)
Executable from PLC	:	No
Parameter value (see Function Key)	:	Name of the event script
Function with ON/OFF state	:	No
Function available in standard masks	:	Yes
Function available in keyboard masks	:	No
Function available in loop scripts	:	No
Function available in event scripts	:	No

Start of an event script. The script and its subfunctions are processed once. The different functions can be carried out within the script, such as mask changes, the setting of tag values, calculations.

14.3.14 Call Script Function on Mask Entry

Number of the Function	:	191 (BFh)
Executable from PLC	:	No
Parameter value (see Function Key)	:	Name of the event script
Function with ON/OFF state	:	No
Function available in standard masks	:	Yes
Function available in keyboard masks	:	Yes
Function available in loop scripts	:	No
Function available in event scripts	:	No

This function is used to call an event script when entering a mask (before the mask is opened). The user interface of the design software shows the name of the function within the function key, whilst the function key on the MMI does not show the name. This function key can also not be operated.

14.3.15 Call 2 Script Function

Number of the Function	: 182 (B6h)
Executable from PLC	: No
Parameter value (see Function Key)	: Name of the event script (this script is called when the key is pressed)
Parameter value (see Function Key)	: Name of the event script (this script is called when the key is released)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

When the key is pressed, the event script that was defined as the first parameter is called once. When the key is released, the event script defined as the second parameter is processed.

14.3.16 Clear all Histories

Number of the Function	: 22 (16h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The history entries of the entire project is deleted. The history of the system error messages is preserved.

See also Error Window, Clear History in Mask, Clear System History, Show History On/Off

14.3.17 Clear History in Mask

Number of the Function	: 21 (15h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The history of the current Error Window object is deleted. This function can be only used, if the actual displayed mask contains an Error Window object. In masks, which do not contain an Error Window object, this function does not have effect.

Note:
If a different Error window uses the same message, the History entry will also be deleted for those Error windows.

See also Error Window, Clear all Histories, Clear System History, Show History On/Off

14.3.18 Clear System History

Number of the Function	: 24 (18h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The history of the system error messages are deleted. System error messages are messages that are not created in the project but are generated by the runtime software (GRS).

The history of the project error messages is preserved. This function can be only used, if the actual displayed mask contains an Error Window object. In masks, which do not contain an Error Window object, this function does not have effect.

Further information about the error messages that are recorded in the History is provided under "System Error Texts" of GRS.HLP.

See also Error Window, Clear all Histories, Clear History in Mask, Show History On/Off, Show Sys. History On/Off

14.3.19 Contrast -

Number of the Function	: 160 (0A0h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

The display contrast is reduced. This special function is only possible with units with a passive LCD display since only these units require a contrast setting. The contrast setting is also retained after the MMI is switched off provided that this was saved with the Contrast Save special function. This function can only be used on the panel.

14.3.20 Contrast +

Number of the Function	: 161 (0A1h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This increases the display contrast. This special function is only possible with units with a passive LCD display since only these units require a contrast setting. The contrast setting is also retained after the MMI is switched off provided that this was saved with the Contrast Save special function. This function can only be used on the panel.

14.3.21 Contrast Middle

Number of the Function	: 162 (0A2h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This sets the display contrast to the standard setting. This special function is only possible with units with a passive LCD display since only these units require a contrast setting. The contrast setting is also retained after the MMI is switched off provided that this was saved with the Contrast Save special function. This function can only be used on the panel.

14.3.22 Contrast Save

Number of the Function	: 163 (0A3h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

The display contrast setting is saved so that this is also retained after the MMI is switched off. This special function is only possible with units with a passive LCD display since only these units require a contrast setting. The contrast can also be set using the special functions Contrast -, Contrast + and Contrast Middle. This function can only be used on the panel.

14.3.23 Error Autoscroll On/Off

Number of the Function	: 13 (0Dh)
Executable from PLC	: No
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

The special function is used in conjunction with Error Window objects. By default the cursor will scroll automatically to the most current error in the error window. This automatic scroll can be deactivated or activated with this function.

After a mask change, automatic scrolling is reactivated.

Note:
If a mask change is executed by a script, the last setting is retained.

See also Error Window

14.3.24 Error confirm

Number of the Function	: 10 (0Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Error messages must be acknowledged by hand before they are removed from the Error window. An error can only be acknowledged if the bit is no longer set to 1.

For this the required line must be selected via Special Functions for selecting a line in the Error window. Clicking this special function will acknowledge the error.

The status of an error message is marked as follows:

- 1 = Error present
- 0 = Error no longer present
- X = Error acknowledged

If an error message was acknowledged for which the bit is still 1, the acknowledge will be ignored even if an entry was not made for it in the history. The acknowledgment of an error message does not affect the status of the corresponding error bit.

14.3.25 Error confirm (actual window)

Number of the Function	: 15 (0Fh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Acknowledges the error messages in the Error Window of the current mask.

See also Error confirm all, Error confirm

14.3.26 Error confirm all

Number of the Function	: 11 (0Bh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes an acknowledgment of all error messages present that have a status 0.

14.3.27 Error first line

Number of the Function	: 4 (04h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function selects the first entry in the Error window.

14.3.28 Error help

Number of the Function	: 12 (0Ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function displays the help text of the selected error message in a help window.

If a help window is not defined in the current mask or the selected error does not contain a help text, this function has no effect.

Information is provided on the definition of help texts in the section Define Text under Help Text.

14.3.29 Error last line

Number of the Function	: 5 (05h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function selects the last entry in the Error window.

14.3.30 Error line down

Number of the Function	: 1 (01h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function selects the next entry in the Error window. If the lowest entry is selected, the list will be moved by one line up.

14.3.31 Error line up

Number of the Function	:	0 (00h)
Executable from PLC	:	No
Function with ON/OFF state	:	No
Function available in standard masks	:	Yes
Function available in keyboard masks	:	No
Function available in loop scripts	:	No
Function available in event scripts	:	No

This function selects the previous entry in the Error window. If the top entry is selected, the list will be moved one line down.

14.3.32 Error page down

Number of the Function	:	2 (02h)
Executable from PLC	:	No
Function with ON/OFF state	:	No
Function available in standard masks	:	Yes
Function available in keyboard masks	:	No
Function available in loop scripts	:	No
Function available in event scripts	:	No

This function moves the selection bar one page (window height) down in the Error window. The selection bar is then in the lowest line or on the last entry (if the window is not full).

14.3.33 Error page up

Number of the Function	:	2 (02h)
Executable from PLC	:	No
Function with ON/OFF state	:	No
Function available in standard masks	:	Yes
Function available in keyboard masks	:	No
Function available in loop scripts	:	No
Function available in event scripts	:	No

This function moves the selection bar one page (window height) up in the Error window. The selection bar is always in the top line.

14.3.34 Execute

Number of the Function	: 197 (c5h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: File name of the program to be run.
Parameter value (see Function Key)	: Parameter, that is to be transferred to the starting program.
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function starts a program with the name of the 1st parameter. A text can be defined optionally as a second parameter. This is used as the start parameter that is transferred to the starting program.

14.3.35 GPI – Frame On/Off

Number of the Function	: 164 (A4h)
Executable from PLC	: No
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Use this function to switch the frame of the GPI ON respectively OFF. The setting also stays when the GPI is exited. This function can only be used with the GPI.

See also GPI – About Dialog, GPI – Communic. Dialog

14.3.36 GPI – About Dialog

Number of the Function	: 165 (A5h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Use this function to display the dialog "About GPI" (see chapter "GRS on PC (GPI)" in GRS.HLP). This function can only be used with the GPI.

See also GPI – Frame On/Off, GPI – Communic. Dialog

14.3.37 IP Address 0..3

These special functions are no longer supported.

Note:
The Execute function can be used instead with the "Network.cpl" parameter function. This calls the standard system control program with which the same settings can be made.

14.3.38 IP Mask 0..3

These special functions are no longer supported.

Note:
The Execute function can be used instead with the "Network.cpl" parameter function. This calls the standard system control program with which the same settings can be made.

14.3.39 IP Gateway 0..3

These special functions are no longer supported.

Note:
The Execute function can be used instead with the "Network.cpl" parameter function. This calls the standard system control program with which the same settings can be made.

14.3.40 Last mask

Number of the Function	: 32 (20h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes the MMI to return to the previously displayed mask. The last 100 masks will be stored.

14.3.41 Save Error History as File

Number of the Function	: 206 (CEh)
Executable from PLC	: No
Parameter value (see Function Key)	: File name (incl. directory) where to save the file.
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Save the error history in a file. The file name (inclusive directory) is defined in first parameter saved.

See also Save System History as File, Show History On/Off

14.3.42 Save Mask as Bitmap

Number of the Function	: 255 (0FFh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function saves the current mask as a bitmap file on the Flash card. This special function **can not be used** with units without Flash card.

The file names are 0.bmp, 1.bmp, 2.bmp, etc., starting with 0.bmp each time after the MMI is switched off. The file names are incremented by 1 each time with each execution of this special function.

14.3.43 Save System History as File

Number of the Function	: 206 (CEh)
Executable from PLC	: Nein
Parameter value (see Function Key)	: File name (incl. directory) where to save the file.
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Save the system history in a file. The file name (inclusive directory) is defined in first parameter saved.

See also Save Error History as File, Show Sys. History On/Off

14.3.44 Set day

Number of the Function	: 146 (92h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows an Increment/Decrement keyboard (Inc/Dec) for setting the day on the integrated clock (value from 1..31).

14.3.45 Set hour

Number of the Function	: 147 (93h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows an Increment/Decrement keyboard (Inc/Dec) for setting the hour time of the integrated clock (value between 0..23).

This setting is always in 24-hour format, irrespective of whether the time/date of the current project is set in US format.

14.3.46 Set minute

Number of the Function	: 148 (94h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows an Increment/Decrement keyboard (Inc/Dec) for setting the minute time of the integrated clock (value between 0..59).

14.3.47 Set month

Number of the Function	: 145 (91h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows an Increment/Decrement keyboard (Inc/Dec) for setting the month time of the integrated clock (value between 1..12).

14.3.48 Set second

Number of the Function	: 149 (95h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows an Increment/Decrement keyboard (Inc/Dec) for setting the second time of the integrated clock (value between 0..59).

14.3.49 Set year

Number of the Function	: 144 (90h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows an Increment/Decrement keyboard (Inc/Dec) for setting the year of the integrated clock (value between 1997..2032).

14.3.50 Set Touch Lock

Number of the Function	: 103 (67h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Activating this function deactivates the touch function. Whilst the touch is disabled a small image will continue to appear and disappear at random points on the screen.

The touch function is reactivated by touching the screen twice at two points located diagonally to each other at the same time.

The mask settings enable a period of no touch operations to be set in "n" minutes after which the normal touch reaction is switched off. See Edit.

This special function can also be initiated by bit 1 of the 3rd data word of Control Data Block(see GRS.HLP). If the touch is deactivated by the PLC, only the PLC can be used to reactivate it.

If the touch is deactivated by the setting in Mask Settings or by calling this function. This is indicated by bit 1 of the 3rd data word in the Status data block. The touch function can only be reactivated by the double touch operation described above.

14.3.51 Show History On/Off

Number of the Function	: 20 (14h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function switches the Error window to the history display that logs the previous errors. The functions for scrolling the list are the same as for the error display (Error line up, Error line down, etc.).

This setting is always deactivated after a mask change.

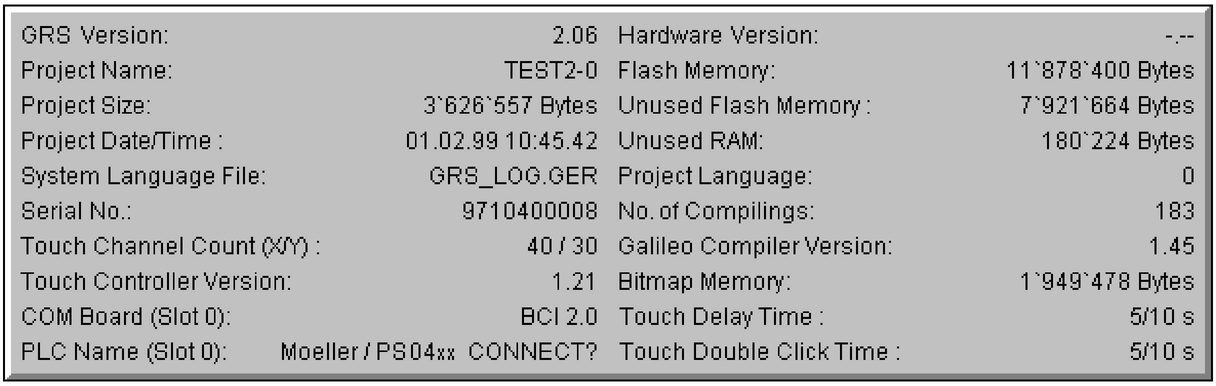
Note: If a mask change is executed by a script, the last setting is retained.

See also Error Window, Clear all Histories, Clear History in Mask, Clear System History

14.3.52 Show Systeminfo

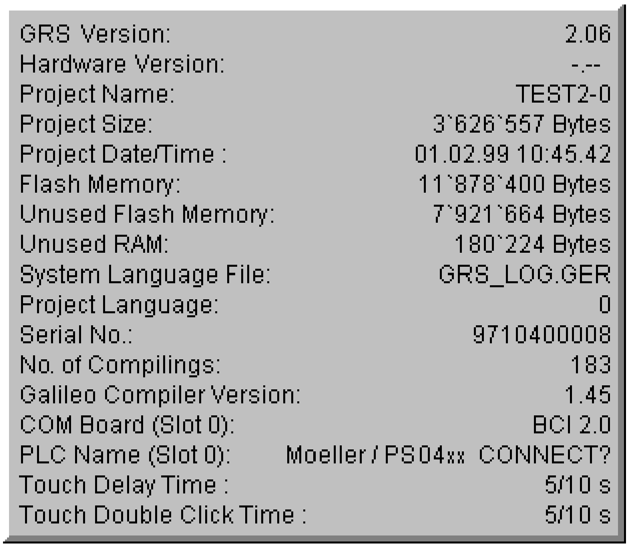
Number of the Function	: 136 (88h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function shows an information window containing the information about the Runtime System GRS and the loaded project.



GRS Version:	2.06	Hardware Version:	-.--
Project Name:	TEST2-0	Flash Memory:	11`878`400 Bytes
Project Size:	3`626`557 Bytes	Unused Flash Memory :	7`921`664 Bytes
Project Date/Time :	01.02.99 10:45.42	Unused RAM:	180`224 Bytes
System Language File:	GRS_LOG.GER	Project Language:	0
Serial No.:	9710400008	No. of Compilings:	183
Touch Channel Count (X/Y) :	40 / 30	Galileo Compiler Version:	1.45
Touch Controller Version:	1.21	Bitmap Memory:	1`949`478 Bytes
COM Board (Slot 0):	BCI 2.0	Touch Delay Time :	5/10 s
PLC Name (Slot 0):	Moeller / PS04xx CONNECT?	Touch Double Click Time :	5/10 s

The Information window for smaller devices is shown below:



GRS Version:	2.06
Hardware Version:	-.--
Project Name:	TEST2-0
Project Size:	3`626`557 Bytes
Project Date/Time :	01.02.99 10:45.42
Flash Memory:	11`878`400 Bytes
Unused Flash Memory:	7`921`664 Bytes
Unused RAM:	180`224 Bytes
System Language File:	GRS_LOG.GER
Project Language:	0
Serial No.:	9710400008
No. of Compilings:	183
Galileo Compiler Version:	1.45
COM Board (Slot 0):	BCI 2.0
PLC Name (Slot 0):	Moeller / PS04xx CONNECT?
Touch Delay Time :	5/10 s
Touch Double Click Time :	5/10 s

Not every device type has the same entries within the Information window. The individual entry fields are explained below:

GRS Version:

GRS runtime software version. This does not have to be identical to the Galileo version.

Hardware Version:

Hardware Version of the MMI Panel

Project Name:

Name of project defined in Galileo.

Project Size:

Memory required for the loaded project

- Including the source projectGlossSourceproject data if this was transferred to the Panel
- Excluding the runtime program

Project Date/Time:

Date and time of project compilation.

Bitmap **Memory:**

Required memory for bitmap files of the project.

Flash Memory:

Hardware total memory capacity of the Flash card or the onboard Flash memory.

Unused Flash Memory:

Unused memory on the flash card.

Unused RAM:

Currently available (unused) RAM memory.

System Language File:

Loaded file containing all system message texts. The system messages appear in red and green bars. The text can be displayed in six different languages:

GRS_LOG.GER	German
GRS_LOG.ENG	English
GRS_LOG.ITA	Italian

GRS_LOG.FRA	French
GRS_LOG.SPA	Spanish
GRS_LOG.USR	User-defined

In addition to the texts defined in these ASCII files, it is also possible to define how long the messages are displayed and which messages are to be stored in the History.

Project Language:

Currently loaded project language. Up to 100 project languages can be defined. The special function Change to language 00..99 can be used to change the language.

Serial No:

The serial number of the Touch Panel has the following meaning:

Key: YYWWTTXXXX

YY	:	Year of production
WW	:	Week of production
TT	:	Model group
XXXX		Consecutive number

No. of Compilings:

The number of times the project was compiled. Each compilation increments the counter. This counter can be used for comparing with other projects.

Galileo Compiler Version:

The compiler versions identify the data structures of the different Galileo versions. The software will not run correctly without the correct compiler version.

Touch Cannel Count (X/Y):

Number of infrared channels on X and Y axes. Each channel has one send and one receive diode.

Touch Controller Version:

Version of the touch controller software. Touch events are evaluated via this software.

COM-Board (Slot 0) or (Slot 1):

Type and version of the communication interface card fitted in Slot 0 or Slot 1.

PLC Name (Slot 0) or (Slot 1):

Name and version of the PLC connected to Slot 0 or 1, as per the selection made in the section Select PLC.

Touch Delay Time:

Time in seconds by which the function of an object with an activated delay attribute is executed when touched.

Refer to the section Touch for more detailed information.

Touch Double Click Time:

Time in seconds between clicks for a double-click.

Refer to the section Touch for more detailed information.

Touch In Beep Frequency, Touch Out Beep Frequency, Fault Touch Beep Frequency:

Frequency of beep on Touch In, Touch Out and Fault Touch. The frequencies cannot be changed.

See also Touch.

Size of cache memory block:

Size of a cache memory in the number of bytes. The cache is used to boost system performance.

No. of cache blocks:

Number of cache blocks.

Total of cache hits:

Number of cache hits since the start of the panel.

14.3.53 Show Sys. History On/Off

Number of the Function	: 137 (89h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function switches the Error window to the history display for the system error messages. Further information about the error messages that are recorded in the History is provided under "System Error Texts" of GRS.HLP.

This setting is always deactivated after a mask change.

Note: If a mask change is executed by a script, the last setting is retained.

See also Error Window, Clear System History

14.3.54 Shut down

Number of the Function	: 100 (64h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

CE Panel

The GRSW runtime program is terminated.

No CE Panel

This function shuts down the operating system so that communication is aborted, the project is closed and the MMI is switched to a mode for the serial transfer of project data.

This function can only be used on the Touch Panel.

14.3.55 Summer time On/Off

Number of the Function	: 102 (66h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function allows the internal clock to be advanced or delayed by one hour.

The setting also stays when the MMI is switched off.

14.3.56 System language English

Number of the Function	: 138 (8Ah)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes the system error messages to be displayed in English. The file is called GRS_LOG.ENG.

See also the description in the section "System Error Texts" of GRS.HLP.

The setting also stays when the MMI is switched off.

14.3.57 System language French

Number of the Function	: 140 (8Ch)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes the system error messages to be displayed in French. The file is called GRS_LOG.FRA.

See also the description in the section "System Error Texts" of GRS.HLP.

The setting also stays when the MMI is switched off.

14.3.58 System language German

Number of the Function	: 139 (8Bh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes the system error messages to be displayed in German. The file is called GRS_LOG.GER.

See also the description in the section "System Error Texts" of GRS.HLP.

The setting also stays when the MMI is switched off.

14.3.59 System language Italian

Number of the Function	: 142 (8Eh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes the system error messages to be displayed in Italian. The file is called GRS_LOG.ITA.

See also the description in the section "System Error Texts" of GRS.HLP.

The setting also stays when the MMI is switched off.

14.3.60 System language Spanish

Number of the Function	: 141 (8Dh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes the system error messages to be displayed in Spanish. The file is called GRS_LOG.SPA.

See also the description in the section "System Error Texts" of GRS.HLP.

The setting also stays when the MMI is switched off.

14.3.61 System language User

Number of the Function	: 143 (8Fh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function allows the system error messages to be displayed in any language. The default language set is English. The file for this is called GRS_LOG.USR. The error texts contained in this file can be translated to any language.

See also the description in the section "System Error Texts" of GRS.HLP.

The setting also stays when the MMI is switched off.

14.3.62 US date and time On/Off

Number of the Function	: 101 (65h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function is used to toggle between the US and 24 hour time/date display format.

	24 hour format	**US format**
Date: *	Day.Month.Year	Month.Day.Year
Time: **	Hour:Minute.Seconds (Hours between 1..23)	Hour:Minute.Second am/pm (Hour between 1..12)

* The year can be two or four digits

** The seconds can be entered as required

The setting also stays when the MMI is switched off.

14.4 Communication

14.4.1 Communication

Comm. on Connection x On/Off

Connection x persistent ON/OFF

GPI – Communic. Dialog

Set MMI Stationno. -Connection x

14.4.2 Comm. on Connection x On/Off

Numbers of the Functions	: Slot 0:2816 (B00h)
	: Slot 1:2817 (B01h)
	: Slot 2:2818 (B02h)
	: Slot 3:2819 (B03h)
	Slot 4: 2850 (B22h)
	Slot 5: 2851 (B23h)
	Slot 6: 2852 (B24h)
	Slot 7: 2853 (B25h)
Executable from PLC	: Yes
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function activates or deactivates communication at the slot concerned.
After the device is restarted, communication is activated to all slots.

See also Connection x persistent ON/OFF

14.4.3 Connection x persistent ON/OFF

Numbers of the Functions	: Slot 0:2842 (B1Ah)
	: Slot 1:2843 (B1Bh)
	: Slot 2:2844 (B1Ch)
	: Slot 3: 2845 (B1Dh)
	Slot 4: 2846 (B1Eh)
	Slot 5: 2847 (B1Fh)
	Slot 6: 2848 (B20h)
	Slot 7: 2849 (B21h)
Executable from PLC	: Yes
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function enables communication to be activated or deactivated at the corresponding slot. This status is also retained after the device is restarted.

See also Comm. on Connection x On/Off

14.4.4 GPI – Communic. Dialog

Number of the Function	: 2820 (B04h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Use this function to display the dialog "Communication Setup" (see chapter "GRS on PC (GPI)" in GRS.HLP). This function can only be used with the GPI.

See also GPI – Frame On/Off, GPI – About Dialog

14.4.5 Set MMI StationNo. -Connection x

Number of the Function	:	Slot 0:2838 (B16h)
	:	Slot 1:2839 (B17h)
	:	Slot 2:2840 (B18h)
	:	Slot 3:2841 (B19h)
		Slot 4:2870 (B36h)
		Slot 5:2871 (B37h)
		Slot 6:2872 (B38h)
		Slot 7:2873 (B39h)
Executable from PLC	:	No
Function with ON/OFF state	:	No
Function available in standard masks	:	Yes
Function available in keyboard masks	:	No
Function available in loop scripts	:	No
Function available in event scripts	:	No
Note	:	This function is only effective if the selected PLC protocol determines an MMI station number.

The current MMI station number is shown inside the function key on the MMI. The MMI station defined according to section Selecting the PLC is shown when the project is first started. Calling this function activates the numeric keyboard for entering a new MMI station number. If a new station number is entered, the device must be restarted. The new station number is also retained after the MMI has been restarted. If a project is recompiled and transferred to the device, the MMI station number defined according to the section Selecting the PLC is valid again.

Note:
This function is only effective if the selected PLC protocol determines an MMI station number (see Selecting the PLC).

14.5 Keyboards

14.5.1 Keyboards

The firmware contains several keyboards for entering values and texts on the MMI. The position of the keyboard on the MMI can be adjusted by touching the display and moving it at the same time. The appearance of these keyboards can also be modified to a certain degree:

- Font style and size of the key inscriptions
- Color of the buttons
- Color of the display in the keyboard
- Color of the keyboard outline

More information on colors is provided in the sections System Keyboards.

The keyboard functions can also be directly integrated into the mask, i.e. each individual key must be integrated in the mask as a special function.

see also:

Alpha numeric

Alpha numeric Password

Inc/Dec 1

Inc/Dec 10

None

Numeric, Numeric Min/Max, Numeric Digit Min/Max

Numeric Password

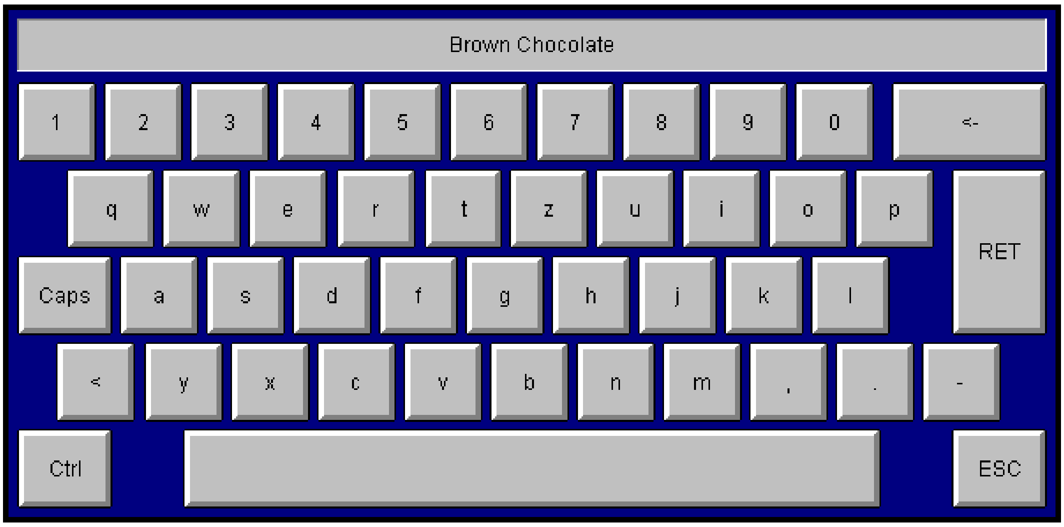
Select Numeric, Select Numeric Digit, Select ASCII

Call user defined Keyboard

14.5.2 Alpha numeric

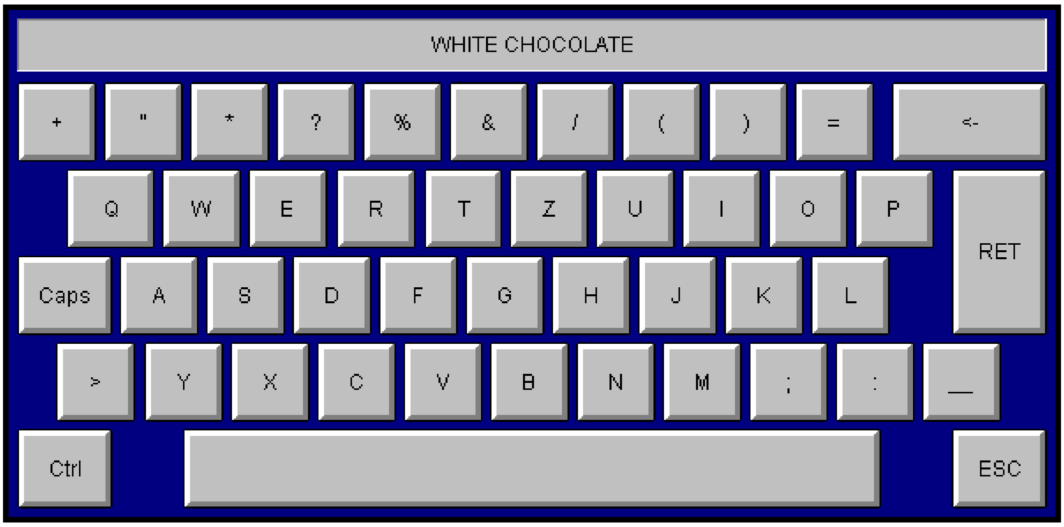
Number of the Function	: 260 (104h)
Executable from PLC	: No
Function with ON/OFF state	: No
Type of return value	: String
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function displays an alphanumeric keyboard (typewriter keyboard).



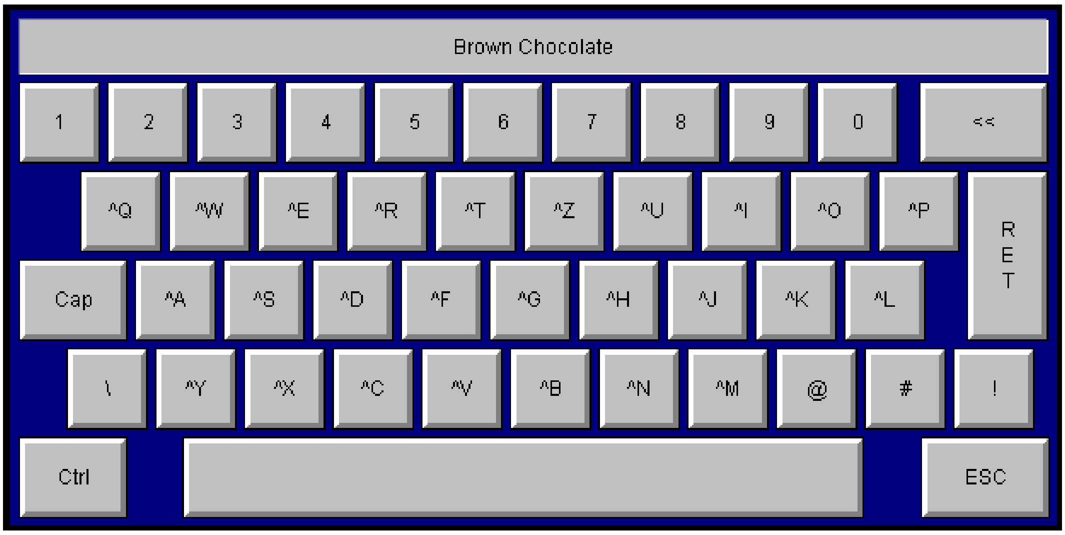
Brown Chocolate

Caps button pressed



WHITE CHOCOLATE

Ctrl button pressed



Brown Chocolate

1 2 3 4 5 6 7 8 9 0 <<
^Q ^W ^E ^R ^T ^Z ^U ^I ^O ^P
R E T
Cap ^A ^S ^D ^F ^G ^H ^J ^K ^L
\ ^Y ^X ^C ^V ^B ^N ^M @ # !
Ctrl
ESC

Any text can be entered in large or small caps, as well as special characters and numbers. These functions are currently only required for entering recipe names.

14.5.3 Alpha numeric Password

Number of the Function	: 264 (108h)
Executable from PLC	: No
Function with ON/OFF state	: Non
Type of return value	: String
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

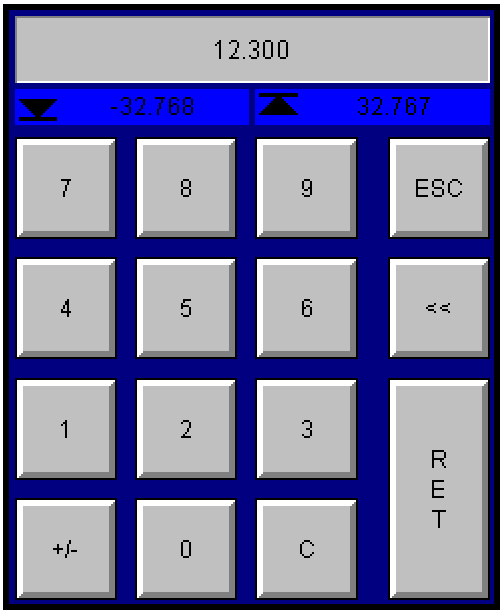
The keyboard is the same as the Alpha numeric keyboard, however, the * characters will appear on the display instead of the entered characters.

14.5.4 Numeric, Numeric Min/Max, Numeric Digit Min/Max

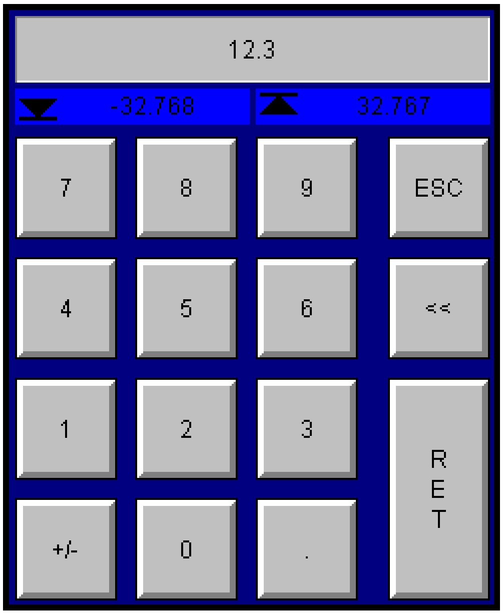
Numbers of the Functions	: **Numeric**:	257 (101h)
	: **Numeric Min/Max**:	258 (102h)
	: **Numeric Digit Min/Max**:	265 (109h)
Executable from PLC	: No	
Function with ON/OFF state	: No	
Type of return value	: Number	
Function available in standard masks	: Yes	
Function available in keyboard masks	: No	
Function available in loop scripts	: No	
Function available in event scripts	: No	

This function enables a value (Value Entry or Bargraph object) to be modified

Numeric Min/Max



Numeric Digit Min/Max



The **Numeric** keyboard is the same as the **Numeric Min/Max**, keyboard without the input range (Minimum and Maximum).

The only difference between the **Numeric Min/Max** and **Numeric Digit Min/Max** keyboards is in the way decimal places are entered. With the **Numeric** and **Numeric Min/Max** keyboards, numbers are entered into the display from the right (like in a cash register), with the decimal point being fixed at the set position. With the **Numeric Digit Min/Max** keyboard, the decimal point can be entered as required with the "**.**" button (like on a pocket calculator).

The following example explains this difference:

Entry range : -32.768...32.767

Number of decimal places : 3

To enter the value 12.300 the following inputs are required for each keyboard:

Numeric, Numeric Min/Max : **1 2 3 0 0**

Numeric Digit Min/Max : **1 2 . 3**

If a value is outside of the entry range when the RET button is pressed, it is modified to the Maximum or Minimum value accordingly.

Pressing ...

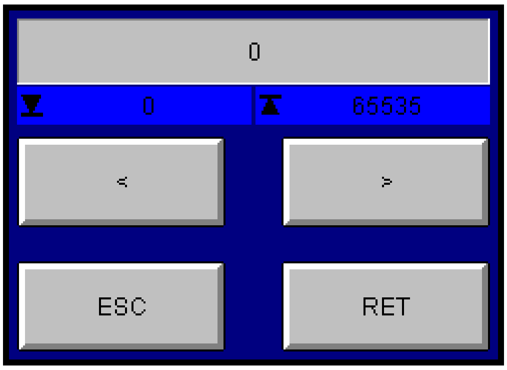
- ..."RET" transfers the value to the PLC.
- ..."ESC" discards the value and aborts the transfer to the PLC
- ..."<<" deletes the last figure
- ... "C" zeros the value (not possible with Numeric Digit Min/Max)
- ..."+/-" negates the value (if signed)
- ... "." inserts the decimal point (only possible with Numeric Digit Min/Max)

See also Numeric Password

14.5.5 Inc/Dec 1

Number of the Function	: 261 (105h)
Executable from PLC	: No
Function with ON/OFF state	: No
Type of return value	: Number
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function allows a value (Value Entry or Bargraph object) to be entered in increments.



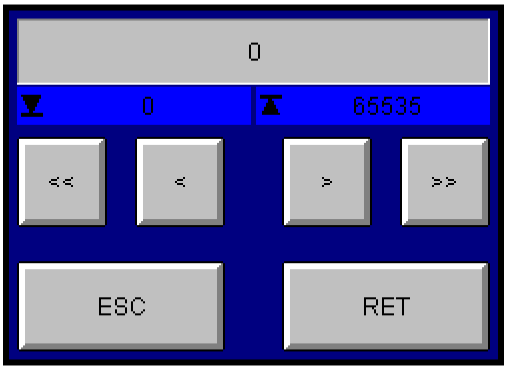
The Minimum (display left) and the Maximum (display right) limit the setting range. Click the RET button to transfer the value to the PLC. Clicking the ESC button exits the keyboard and causes the value to be discarded and not sent to the PLC.

See also Inc/Dec 1, Dec 1 (assigned), Dec 10 (assigned), Inc 1 (assigned), Inc 10 (assigned)

14.5.6 Inc/Dec 10

Number of the Function	: 262 (106h)
Executable from PLC	: No
Function with ON/OFF state	: No
Type of return value	: Number
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function allows a value (Value Entry or Bargraph object) to be entered in increments of 1 or 10.



The Minimum (display left) and the Maximum (display right) limit the setting range. Click the RET button to transfer the value to the PLC. Clicking the ESC button exits the keyboard and causes the value to be discarded and not sent to the PLC.

See also Inc/Dec 1, Inc 1 (assigned), Dec 1 (assigned), Dec 10 (assigned), Inc 1 (assigned), Inc 10 (assigned)

14.5.7 None

Number of the Function	: 256 (100h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

If the "None" setting is selected for the objects, Value Entry, Bargraph or PLC Text, the value cannot be adjusted on the MMI since a keyboard cannot appear when touched and the value cannot be selected.

14.5.8 Numeric Password

Number of the Function	: 263 (107h)
Executable from PLC	: No
Function with ON/OFF state	: No
Type of return value	: Number
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This keyboard is the same as the Numeric, Numeric Min/Max, Numeric Digit Min/Max keyboard, however, the * characters will appear on the display instead of the entered characters.

14.5.9 Select Numeric, Select Numeric Digit, Select ASCII

Numbers of the Functions	: **Select Numeric**	266 (10Ah)

	:	**Select ASCII**	267 (10Bh)
	:	**Select Numeric Digit**	268 (10Ch)
	:	**Select User defined Keyboard**	378 (17Ah)
Executable from PLC	:	No	
Function with ON/OFF state	:	No	
Function available in standard masks	:	Yes	
Function available in keyboard masks	:	No	
Function available in loop scripts	:	No	
Function available in event scripts	:	No	

If the **Select Numeric, Select Numeric Digit** or the **Select ASCII** keyboard is chosen for an object of type Value Entry, Bargraph or PLC Text, clicking the object on the MMI causes the value to be selected which can then by adjusted using the object Function Key (Group Keyboards or Character Entry). In this case the adjustment buttons (Inc/Dec or Keyboard) are always displayed in the mask.

Repeated pressing undoes the selection of an object.

The only difference between the **Select Numeric** and **Select Numeric Digit** keyboards is the way decimal places are entered. With the **Select Numeric** function, numbers are entered into the display from the right (like in a cash register), with the decimal point being fixed at the set position. With the **Select Numeric Digit** function, the decimal point can be entered as required with the "**.**" button (like on a pocket calculator).

The system keyboard **Select ASCII** is for the entry of PLC texts. For this the system keyboard **Select ASCII** must be selected at the PLC text object.

The special function Call user defined Keyboard can be used to call up a user-defined keyboard for the entry.

See also Numeric, Numeric Min/Max, Numeric Digit Min/Max

14.5.10 Call user defined Keyboard

Numbers of the Functions	: 378 (17Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter Value (see Function Key)	: User defined Keyboard (see User Defined Keyboards)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

The special function **Call User defined Keyboard** is used for entries with use-defined keyboards. The user-defined keyboard must be selected as the third parameter. The system keyboard Select Numeric, Select Numeric Digit, Select ASCII must be selected at the object in order to make entries via a user-defined keyboard.

14.6 Language Selection

14.6.1 Language Selection

The GRS firmware manages up to 100 languages at the same time. This makes it possible to change different languages on the MMI if there is a special function for each language.

14.6.2 Change to language 00..99

Numbers of the Functions	: 512 (200h) to 611 (263h)
	: Language 0: 512 (200h)
	: Language 1: 513 (201h)
	: ...
	: Language 99: 611 (263h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Language 0 is always the default language (language in which the project was created). Use Galileo Workshop (GWS) to translate all texts of a project to one of these 100 possible languages. See also GWS.HLP.

With enhanced language settings, (see Enhanced Functions in chapter Enhanced Functions) the fonts are changed according to the settings of the Font Table A / B in the Enhanced language settings dialog as well as the language. This is used with non-Roman character sets (Cyrillic, Greek, Hebrew etc.).

See also description in chapter Languages and Enhanced Functions

The following points must also be remembered with regard to language changes:

- The setting is retained also after the MMI is switched off.
- A user login will automatically (see User Login) cause the language to be selected that the user last used. Language 0 will be set for users that have not logged in before.
  See also Password Settings
- When the special function Login at Level x is active, level x is switched to the language that was last used by this level ① . Language 0 is selected automatically the first time that this level is used.

  See also Password Settings
- Language 0 is always selected if another language is not available for the language selection.
- After a project has been compiled for the first time and loaded onto the unit, language 0 is loaded when the unit is started.
- Language 0 is loaded when a new project is transferred to the unit and the unit is started.

① The setting for the last language used for special functions User Login and Login at Level x are stored separately, even if both special functions activate the same level.

14.7 Printer Functions

14.7.1 Printer Functions

A printer can be connected to the system port of the MMI. The exact pin assignment of the system port is given in the device description of the MMI.

The required printer settings are entered in the Panel Printer Settings dialog.

The other interface parameters are as follows:

- Data width: 8 Bit
- 1 Stop bit
- No parity
- Hardware handshake

A description of the cable is given in chapter Serial cable.

see also:

Change to Printer

Print ESC Sequence

Print Form Feed

Print Form No. xy

Print History

Print Mask

Print Mask (no Header)

Print Online All

Print Online Errors

Print Parameter List

Print Parameter List (no Header)

Print Report

14.7.2 Change to Printer

Number of the Function	: 800 (320h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function switches the print job to a different printer. After the function has been executed, all print jobs are output to the selected printer.

See also MMI-Printer, Print Options (Overview)

14.7.3 Print ESC Sequence

Number of the Function	: 780 (30Ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Sends the control characters specified as parameters with the Function Key definition to the MMI printer. The control characters are transferred as a string in hexadecimal format with a space between each character (e.g. "1B 3C 1B 64"). Refer to the printer manual for the control characters required.

See also ESC Sequence, Printer Driver (*.prv), Print options (Overview)

14.7.4 Print Form Feed

Number of the Function	: 779 (30Bh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Initiates a print form feed to the printer.

14.7.5 Print Form No.xy

Number of the Function	: 778 (30Ah)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter Value (see Function Key)	: Number of the Printer Form (see Define Printing Form)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function enables forms to be printed out. Tag values can be printed out online using these printing forms. The xy entry is the form number. See also Define Printing Form. These numbers xy are transferred to the Function Key as parameters.

This special function uses the 5th data word in the Control Data Block (see also GRS.HLP) to transfer the form number when the function is initiated from the PLC.

Note:
The print form can only be printed out in Text mode. For graphic printouts or with non-Roman character sets see Languages, Print options (Overview), and Print Report.

14.7.6 Print History

Number of the Function	: 768 (300h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Prints the history of the accumulated error messages. See also the description of "Error", "Warning" and Show History On/Off.

Error messages can be printed out as follows:

Status	Error number	Date/Time	Error text

Meaning:

Status:	This column shows the current status of the error. 1 for error active, 0 for error no longer active and X for error acknowledgment
Error number:	Shows the error number
Date/Time:	Date/Time entry in format: "DD.MM.YY hh:mm.ss" and with US time format "MM-DD-YY hh:mm.ss am/pm"

Error text:	Error description which is shown with every error (see Error Text).

See also Error Window, US date and time On/Off

14.7.7 Print Mask

Number of the Function	: 788 (314h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Saves the current screen contents when the function was triggered and prints it out. The printing is carried out in the background. This means that the printout may be slightly slower than normal (higher cycle time of the GRS runtime program).

A header line with title, date and time is printed at the beginning of the page.

Note:
This function can only be used with printers supporting full graphics printouts (see also Printer Driver (*.prv)).

Attention:
The printed masks are dotted, if the color depth of the panel is adjusted to 65535.

See also Print Mask (no header)

14.7.8 Print Mask (no header)

Number of the Function	: 789 (315h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Same function as Print Mask, without printed header line.

Note:
This function can only be used with printers supporting full graphics printouts (see also Printer Driver (*.prv)).

Attention:
The printed masks are dotted, if the color depth of the panel is adjusted to 65535.

See also PrintMask

14.7.9 Print Online All

Number of the Function	: 770 (302h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

All "Errors", "Warnings" and "System error texts" that occur are logged on the printer online. Calling this function again will deactivate the logging.

The setting is also retained when the MMI is switched off.

The format of the printout is described under chapter Print History.

See also the description of Print Online Errors

This special function uses bit 14 of the 3rd data word in the Control Data Block (see also GRS.HLP).

14.7.10 Print Online All (no header)

Number of the Function	: 772 (304h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Same function as Print Online All, without printed header line and page breaks.

14.7.11 Print Online Errors

Number of the Function	: 769 (301h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

All "Errors" and "Warnings" that occur are logged on the printer online. Calling this function again will deactivate the logging.

The setting is also retained when the MMI is switched off.

The format of the printout is described under chapter Print History.

See also the description of Print Online All

This special function uses bit 14 of the 3rd data word in the Control Data Block (see also GRS.HLP).

14.7.12 Print Online Errors (no header)

Number of the Function	: 771 (303h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Same function as Print Online Errors, without printed header line and page breaks.

14.7.13 Print Parameter List

Number of the Function	: 801 (321h)
Executable from PLC	: No (see Initiating functions from the PLC)
Executable from PLC	: No
Function with ON/OFF state	: Name of parameter list (see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function enables the printing of parameter lists. The parameter list to be printed must be defined as a parameter.

Note:
The parameter list can only be printed out in text mode.

See also Print Parameter List (no Header)

14.7.14 Print Parameter List (no Header)

Number of the Function	: 802 (322h)
Executable from PLC	: No (see Initiating functions from the PLC)
Executable from PLC	: No
Function with ON/OFF state	: Name of parameter list (see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function enables the printing of parameter lists. The parameter list to be printed must be defined as a parameter. Unlike the Print Parameter List function, no header line is printed.

Note:
The parameter list can only be printed out in text mode.

See also Print Parameter List

14.7.15 Print Report

Number of the Function	: 781 (30dh)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Name of the mask of the printing report
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function is used to produce a print report (print form). The print report in Galileo is like a mask, and can be adjusted in height and width as required (for this see "Print report" in chapter Edit). Certain objects cannot be used in "Print report" type masks (see for this Print options (Overview).

The values are saved when the function is triggered. The contents of the object Graph are only printed out if plotting was stopped during printing (see also Start/Stop Graph 0..99).

Note:
This function can only be used with printers supporting full graphics printouts (see also Printer Driver (*.prv)).

14.8 Character Entry

14.8.1 Character Entry

Each button of an integrated keyboard (Keyboards) is also available individually as a function.

Some buttons are available also as "Stream Character". The difference between "Normal" buttons and "Stream" buttons is:

- "Stream" button signals are transferred directly when pressed, i.e. each character entered of a value.
  If, for example, the value of a tag is set to 1234, the tag will take on the following value: 1, 12, 123 and 1234. The values are also transferred to the PLC as soon as the value is entered.
- "Normal" buttons only transfer the character and the value when the entry has been confirmed ("RET"). The transfer to the PLC also does not start until the "RET" button is touched.

see also:

Available Buttons

Dec 1 (assigned)

Dec 10 (assigned)

Display 'Maximum'

Display 'Maximum' in Hex

Display 'Minimum'

Display 'Minimum' in Hex

Display 'Value/Text'

Display 'Value' in Hex

Inc 1 (assigned)

Inc 10 (assigned)

Keyboard Mask Display

Keyboard Mask CANCEL

Keyboard Mask OK

Keyboard Mask YES

Key 'ASCII Code'

Key 'number'

Key 'number' with 'RET'

Key 'RET' with Script Function

Key 'string'

Key 'string' with 'RET'

Key 'Window Move'

Password 'Level'

Password 'Password'

Password 'Password New'

Password 'Password Confirm'

Password 'User'

14.8.2 Available buttons

"a" ... "z"

"A" ... "Z"

"0" ... "9"

"%" "&" "(", ")", "*", "/", ":", ";", "?", "\", "_", "<", ">", "<<", "=", "+", ".", ","

"Space", "<<" (Backspace), "C" (Clear), "Dec 1", "Dec 10", "Inc 1", "Inc 10", "ESC", "RET", "+/-" (Sign)

The following buttons are also available as stream buttons:

"0" ... "9"

"<<" (Backspace), "C" (Clear), "Inc 1", "Dec 1", "Inc 10", "Dec 10", "+/-" (Sign)

14.8.3 Dec 1 (assigned)

Number of the Function	: 1681 (691h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the tag (see Definition of Tags)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Touching this function key decrements the tag value by 1. This function is only available as a Stream button. "Stream" buttons allow the tag value to be transferred to the PLC directly after it has been changed.

See also Dec 10 (assigned), Inc 1 (assigned), Inc 10 (assigned), Inc/Dec 1, Inc/Dec 10

14.8.4 Dec 10 (assigned)

Number of the Function	: 1682 (692h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the tag (see Definition of Tags)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Touching this function key decrements the tag value by 10. This function is only available as a Stream button. "Stream" buttons allow the tag value to be transferred to the PLC directly after it has been changed.

See also Dec 1 (assigned), Inc 1 (assigned), Inc 10 (assigned), Inc/Dec 1, Inc/Dec 10

14.8.5 Display 'Maximum'

Number of the Function	: 1184 (4A0h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

Shows the maximum value of a numeric User Defined Keyboards.

See also Display 'Maximum' in Hex, Display 'Minimum', Display 'Minimum' in Hex

14.8.6 Display 'Maximum' in Hex

Number of the Function	: 1189 (4A5h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

Shows the maximum value in a numeric User Defined Keyboards in hexadecimal format.

See also Display 'Maximum', Display 'Minimum', Display 'Minimum' in Hex

14.8.7 Display 'Minimum'

Number of the Function	: 1183 (49Fh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

Shows the minimum value of a numeric User Defined Keyboards.

See also Display 'Minimum' in Hex, Display 'Maximum', Display 'Maximum' in Hex

14.8.8 Display 'Minimum' in Hex

Number of the Function	: 1188 (4A4h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

Shows the minimum value in a numeric User Defined Keyboards in hexadecimal format.

See also Display 'Minimum', Display 'Maximum', Display 'Maximum' in Hex

14.8.9 Display 'Value/Text'

Number of the Function	: 1185 (4A1h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

Show the text/value entered in a numeric User Defined Keyboards. If this object is used, the position of the keyboard can be moved within the entire mask. The position of the keyboard can also be changed via the functions Display 'Value' in Hex and Key 'Window Move'.

See also User Defined Keyboards

14.8.10 Display 'Value' in Hex

Number of the Function	: 1190 (4A6h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

Shows the value entered in a numeric User Defined Keyboards. If this object is used, the position of the keyboard can be moved within the entire mask. The position of the keyboard can also be changed via the functions Display 'Value' in Hex and Key 'Window Move'.

14.8.11 Key 'Window Move'

Number of the Function	: 1186 (4A2h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This object is used to move the keyboard position within the entire mask. The user interface of the design software shows the name of the function within this function key, whilst the function key on the MMI does not show the name. The position of the keyboard can also be changed via the functions Display 'Value/Text' and Display 'Value' in Hex.

See also User Defined Keyboards

14.8.12 Inc 1 (assigned)

Number of the Function	: 1683 (693h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the tag (see Definition of Tags)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Touching this function key increments the tag value by 1. This function is only available as a Stream button. "Stream" buttons allow the tag value to be transferred to the PLC directly after it has been changed.

See also Dec 1 (assigned), Dec 10 (assigned), Inc 10 (assigned), Inc/Dec 1, Inc/Dec 10

14.8.13 Inc 10 (assigned)

Number of the Function	: 1684 (694h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the tag (see also Definition of Tags)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Touching this function key increments the tag value by 10. This function is only available as a Stream button. "Stream" buttons allow the tag value to be transferred to the PLC directly after it has been changed.

See also Dec 1 (assigned), Dec 10 (assigned), Inc 1 (assigned), Inc/Dec 1, Inc/Dec 10

14.8.14 Keyboard Mask Display

Number of the Function	: 1164 (48ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function corresponds to the display of a value (numeric keyboards) and string (alphanumeric keyboards) within Keyboards. This function can only be used in conjunction with the user-defined keyboards.

See also Edit

14.8.15 Keyboard Mask CANCEL

Number of the Function	: 1165 (48dh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function corresponds to the ESC key (Cancel) in Keyboards. This function can only be used in conjunction with the user-defined keyboards.

See also Edit, Confirmation Check

14.8.16 Keyboard Mask OK

Number of the Function	: 1166 (48eh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function corresponds to the RETURN key (OK) in Keyboards. This function can only be used in conjunction with the user-defined keyboards.

See also Edit, Confirmation Check

14.8.17 Keyboard Mask YES

Number of the Function	: 1199 (4AFh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

Diese Funktion kann nur im Zusammenhang mit User Defined Keyboards für Sicherheitsabfragen verwendet werden.

Siehe auch Mask Type, Confirmation Check, User Defined Keyboards

14.8.18 Key 'ASCII Code'

Number of the Function	: 1196 (4ACh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: ASCII value of a character
Function available in standard masks	: Yes
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used to enter a character in conjunction with User Defined Keyboards. Unlike the functions "Key a", "Key b", etc., this function can be assigned any ASCII value. The string is accepted by using the RETURN function. Alphanumeric Keyboards are used for text entries in conjunction, for example, with PLC Text Objects, Password Functions.

See also Key 'number', Key 'number' with 'RET', Key 'string' with 'RET', Keyboards, Mask Types

14.8.19 Key 'number'

Number of the Function	: 1191 (4A7h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used to enter a numeric value in conjunction with User Defined Keyboards. Unlike the functions "Key 1", "Key 2", etc., this function can be assigned any numeric value. The numeric value is accepted by using the RETURN function.

See also Key 'number' with 'RET', Key 'string', Key 'string' with 'RET', Keyboards, Mask Type

14.8.20 Key 'number' with 'RET'

Number of the Function	: 1193 (4A9h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is also used to enter any numeric value, in the same way as the function Key 'number', however, this function also activates the RETURN key (OK). If this function is used within a User Defined Keyboards, the numeric value is accepted and the keyboard is closed.

See also Key 'number', Key 'string', Key 'string' with 'RET', Keyboards, Mask Type

14.8.21 Key 'RET' and 'Call Script Function'

Number of the Function	: 1195 (4ABh)
Executable from PLC	: No
Parameter value (see Function Key)	: Event Script
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function automatically initiates the RETURN key (OK), and the event script specified as a parameter is called directly afterwards. Different functions can be carried out within the Event Script. If this function is used within a User Defined Keyboards, the numeric value is accepted, the keyboard is closed and the event script is called.

See also Call Script Function on Mask Entry, Key 'number' with 'RET', Key 'string' with 'RET'

14.8.22 Key 'string'

Number of the Function	: 1192 (4A8h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used to enter a text (string) in conjunction with User Defined Keyboards. Unlike the functions "Key a", "Key b", etc., this function can be assigned any string. The string is accepted by using the RETURN function. Alphanumeric Keyboards are used for entering text in conjunction, for example, with PLC Text, Password Functions.

See also Key 'number', Key 'number' with 'RET', Key 'string' with 'RET', Keyboards, Mask Type

14.8.23 Key 'string' with 'RET'

Number of the Function	: 1194 (4AAh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is also used to enter a text (string), in the same way as the function Key 'number', however, this function also activates the RETURN key (OK). If this function is used within a Defined Keyboards, the numeric value is accepted and the keyboard is closed.

See also Key 'string', Key 'number', Key 'number' with 'RET', Keyboards, Mask Type

14.8.24 Password 'Level'

Number of the Function	: 1177 (499h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used in user-defined password keyboards for entering the user level. Activating this function will call up a numeric keyboard for entering the user level.

See also Password 'Password', Password 'Password New', Password 'Password Confirm', Password 'User', Mask Type, User Defined Keyboards

14.8.25 Password 'Password'

Number of the Function	: 1178 (49Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used in user-defined password keyboards for entering the password. Activating this function opens the Keyboards for Password Administration.

See also Password 'Password New', Password 'Password Confirm', Mask Type, User Defined Keyboards

14.8.26 Password 'Password New'

Number of the Function	: 1179 (49Bh)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used in user-defined password keyboards for entering the new password when a password is changed. Activating this function opens the Keyboards for Password Administration.

See also Password 'Password', Password 'Password Confirm', Mask Type, User Defined Keyboards

14.8.27 Password 'Password Confirm'

Number of the Function	: 1180 (49Ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used in user-defined password keyboards for entering the confirmation of the new password. Activating this function opens the Keyboards for Password Administration.

See also Password 'Password', Password 'Password New', Mask Type, User Defined Keyboards

14.8.28 Password 'User'

Number of the Function	: 1176 (498h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used in user-defined password keyboards for entering a user. Activating this function will open the Keyboard for User Entry.

See also Password 'Level', Mask Type, User Defined Keyboards

14.9 Password Functions

14.9.1 Password Functions

The user level, user and password settings are described in the section Password Settings. It is possible to define new users and modify existing users directly on the panel.

Users assigned level 0 are granted all access rights. The higher the level number the less rights available to the user concerned.

see also:

Change Level

Change Level -userdef.

Change PW (Level x)

Change PW (Level x) -userdef.

Change PW (other User)

Change PW (other User) -userdef.

Change PW (own)

Change PW (Own) -userdef.

Delete User

Delete User -userdef.

Login at Level x

Login at Level x -userdef.

New User

New User -userdef.

Reset Bad Login (Level x)

Reset Bad Login (User)

Reset Bad Login (User) -userdef.

Show all Users

Show All Users -userdef.

User Login

User Login -userdef.

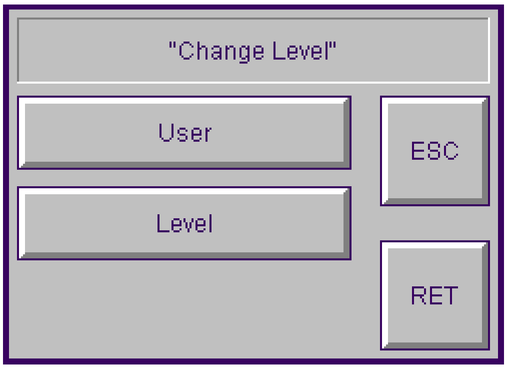
User Logout

14.9.2 Change Level

Number of the Function	: 1284 (504h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Changes the user level of an existing user. This special function is only permissible for user levels higher (with fewer access rights) than the currently active user level. The option Create, delete and change levels of Users must be checked for the current user.

The following dialog will appear if this special function is activated:



User

Click this button to call up the keyboard for entering the user name defined under Type of the Username Keyboard.

Click the RETURN button to quit the dialog box. The entered user name will then remain in this button.

Level

Click this button to open the numeric keyboard for entering the new user level.

Click the RETURN Button to quit the dialog box. The entered user level will then remain in this button.

ESC

Click this button to quit the dialog without making any changes to the user level.

RET

The user is immediately assigned the selected user level and the appropriate access rights for this level.

14.9.3 Change Level -userdef.

Number of the Function	: 1316 (524h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Call of a User Defined Keyboards for changing the user level.

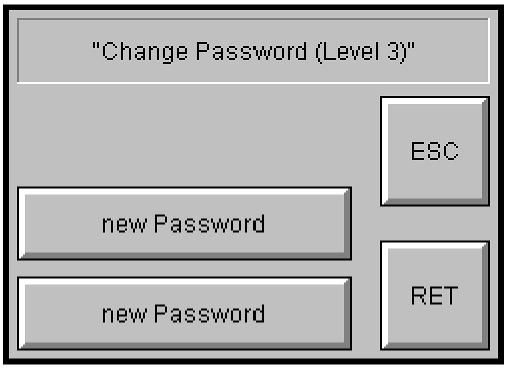
See also Change Level

14.9.4 Change PW (Level x)

Number of the Function	: 1290 (50Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Changes the password for level x. The x is the parameter specified with the Function Key definition. This special function is only permissible for user levels higher (with fewer access rights) than the currently active user level. The option Create, delete and change levels of Users must be checked for the current user.

The following dialog will appear if this special function is activated:



new Password

First entry of the new password using the keyboard defined under Type of the Password Keyboard.

new Password

Second entry of the new password using the keyboard defined under Type of the Password Keyboard. This second entry is used to verify the first entry.

If the entries of the two new Password fields do not match, the old password is retained.

ESC

Click this button to quit the dialog without making any changes to the password.

RET

If the two passwords match, the new password is assigned to this user level.

14.9.5 Change PW (Level x) -userdef.

Number of the Function	: 1322 (52Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected user level (see Password Settings)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Call of a user-defined keyboard for changing the password of user level x.

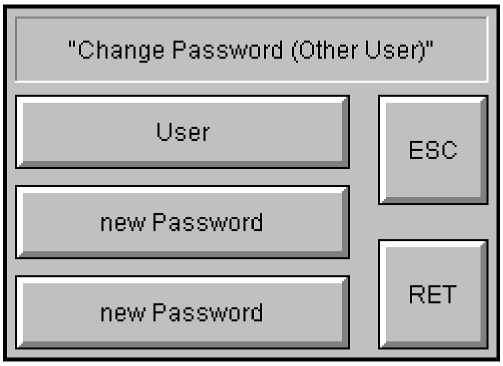
See also Change PW (Level x)

14.9.6 Change PW (other User)

Number of the Function	: 1283 (503h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Changes the password of a user. This special function is only permissible for user levels higher (with few access rights) than the currently active user level. The option Create, delete and change levels of Users must be checked for the current user.

The following dialog will appear if this special function is activated:



User

Entry of the user name using the keyboard defined under Type of the Username Keyboard .

new Password

First entry of the new password using the keyboard defined under Type of the Password Keyboard.

new Password

Second entry of the new password using the keyboard defined under Type of the Password Keyboard. This second entry is used to verify the first entry.

If the entries of the two new Password fields do not match, the old password is retained.

ESC

Click this button to quit the dialog without making any changes to the password.

RET

If the two passwords match, the new password is assigned to this user level.

14.9.7 Change PW (other User) -userdef.

Number of the Function	: 1315 (523h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Call of a user-defined keyboard for changing a user password.

See also Change PW (other User)

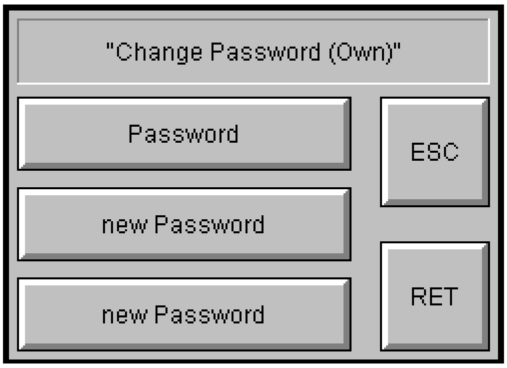
14.9.8 Change PW (own)

Number of the Function	: 1282 (502h)
Executable from PLC	: No

Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Use this special function to change one's own password.

Activate this special function to call the following dialog:



Password

Entry of the old password using the keyboard defined under Type of the Password Keyboard.

new Password

First entry of the new password using the keyboard defined under Type of the Password Keyboard.

new Password

Second entry of the new password using the keyboard defined under Type of the Password Keyboard. This second entry is used to verify the first entry.

If the entries of the two new Password fields do not match, the old password is retained.

ESC

Click this button to quit the dialog without making any changes to the password.

RET

If the two passwords match, the new password is assigned to this user level.

14.9.9 Change PW (Own) -userdef.

Number of the Function	: 1314 (522h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Call of a user-defined keyboard for changing user's personal password.

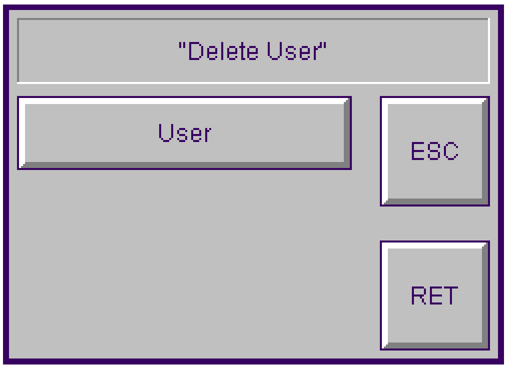
See also Change PW (own)

14.9.10 Delete User

Number of the Function	: 1286 (506h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Use this function to delete a user. It is only possible to delete users with higher user levels (i.e. with fewer access rights). The option Create, delete and change levels of Users must be checked for the current user.

The following dialog will appear if this special function is activated:



User

Click this button to call up the keyboard for entering the user name defined under Type of the Username Keyboard .

ESC

Click this button to quit the dialog without making any changes to the user.

RET

The selected user is deleted.

14.9.11 Delete User -userdef.

Number of the Function	: 1318 (526h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No

Function available in loop scripts	: No
Function available in event scripts	: No

Call of a user-defined keyboard for removing a user.

See also Delete User

14.9.12 Login at Level x

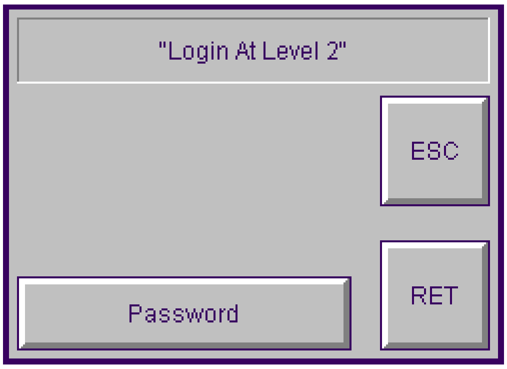
Number of the Function	: 1287 (507h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Log in with the password for user level x. The x is the parameter specified in the Function Key definition

When called this function will automatically cause the language to be loaded that was active the last time the function was called on this level. Language 0 is selected automatically the first time that the function is used with this level.

See also Language Selection

The following dialog will appear if this special function is activated:



Password

Entry of the password using the keyboard defined under Type of the Password Keyboard.

ESC

Click this button to quit the dialog without logging in.

RET

If the correct password is entered, the selected user level and all access rights assigned to it (i.e. the level access rights and those of the levels above it) are activated.

14.9.13 Login at Level x -userdef.

Number of the Function	: 1319 (527h)
Executable from PLC	: No

Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected user level (see Password Settings)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Call of a user-defined keyboard for logging in with the password of user level x. Parameter x is specified in the definition of the Function Key.

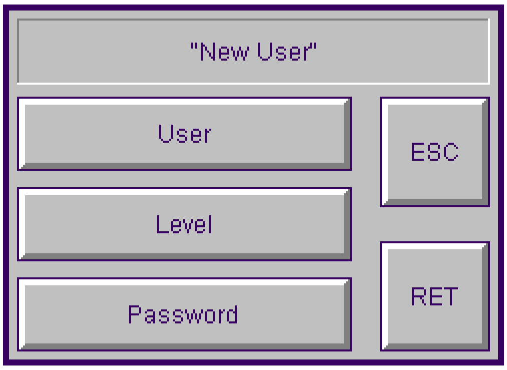
See also Login at Level x

14.9.14 New User

Number of the Function	: 1285 (505h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Use this function to define a new user. This special function is only permissible for user levels higher (with fewer access rights) than the currently active user level. The option Create, delete and change levels of Users" must be checked for the current user. If the Max. No. of Users is already being used, no more additional users can be defined.

The following dialog will appear if this special function is activated:



User

Click this button to call up the keyboard for entering the user name defined under Type of the Username Keyboard.

Level

Click this button to open the numeric keyboard for entering the new user level.

Password

Entry of the password using the keyboard defined under Type of the Password Keyboard.

ESC

Click this button to quit the dialog without defining a new user.

RET

The new user is entered into the list.

14.9.15 New User -userdef.

Number of the Function	: 1317 (525h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Call of a user-defined keyboard for defining a new user. Only users with less access rights than the currently active user can be added.

See also New User

14.9.16 Reset Bad Login (Level x)

Number of the Function	: 1289 (509h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function resets the counter of the invalid login of user level x. Function Key definition. This special function is only permissible for user levels higher (with fewer access rights) than the currently active user level. The option Reset the bad Login Counter must be checked for the current user.

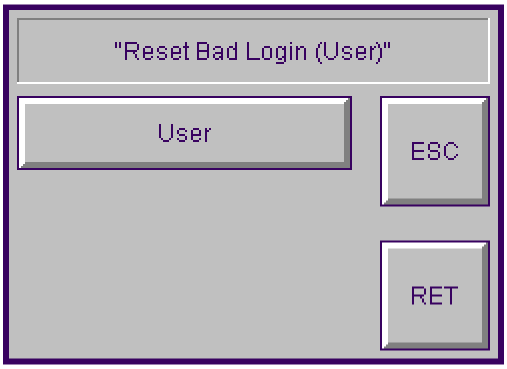
14.9.17 Reset Bad Login (User)

Number of the Function	: 1288 (508h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes

Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function resets the counter of the invalid login of a user. This special function is only permissible for user levels higher (with fewer access rights) than the currently active user level. The option Reset the bad Login Counter must be checked for the current user.

The following dialog will appear if this special function is activated:



User

Click this button to call up the keyboard for entering the user name defined under Type of the Username Keyboard .

ESC

Click this button to quit the dialog without clearing the counter of the invalid login.

RET

The counter of the invalid login is reset, i.e. the user can log in again.

14.9.18 Reset Bad Login (User) -userdef.

Number of the Function	: 1320 (528h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Call of a user-defined keyboard for resetting the counter for invalid logins of a user.

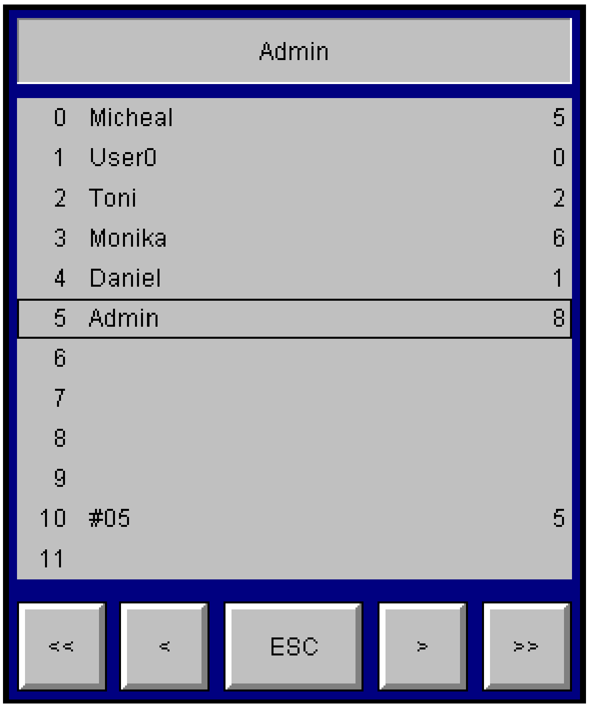
See also Reset Bad Login (User)

14.9.19 Show all Users

Number of the Function	: 1291 (50Bh)
Executable from PLC	: No

Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

The following dialog will appear if this special function is activated:



Admin

0	Micheal	5
1	User0	0
2	Toni	2
3	Monika	6
4	Daniel	1
5	Admin	8
6		
7		
8		
9		
10	#05	5
11		

The list contains all defined users. It has the following structure.

Column 1	Zero-based user number
Column 2	User name
Column 3	Level assigned to the user

The list contains as many entries as defined under Max. No. of Users.

* Each user level can also be assigned a password (See also Just a Level Password). User names which start with the # character are level passwords. The number after the # contains the level.

Button <<

Moves one page up within the selection list.

Button <

Moves one entry up within the selection list.

Button >

Moves one entry down within the selection list.

Button >>

Moves one page down within the selection list.

ESC

Quit the dialog.

14.9.20 Show All Users -userdef.

Number of the Function	: 1323 (52Bh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Call of a user-defined keyboard for displaying all users.

See also Show all Users

14.9.21 User Login

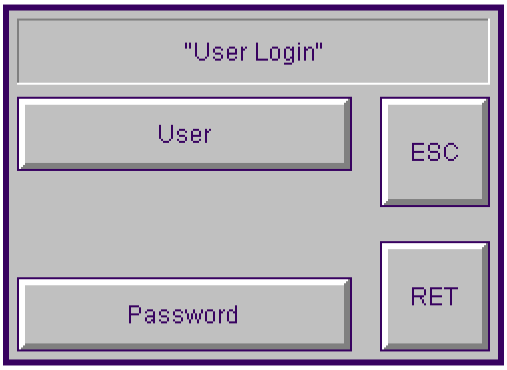
Number of the Function	: 1280 (500h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Login with a user and the appropriate password.

When called this function will automatically cause the language to be loaded that was last used by the currently activated user. Language 0 will be set for users that have not logged in before.

See also Language Selection

The following dialog will appear if this special function is activated:



User

Click this button to call up the keyboard for entering the user name defined under Type of the Username Keyboard.

Password

Entry of the password using the keyboard defined under Type of the Password Keyboard.

ESC

Click this button to quit the dialog without logging in.

RET

If the correct password is entered, the selected user level and all access rights assigned to it (i.e. the level access rights and those of the levels above it) are activated.

14.9.22 User Login -userdef.

Number of the Function	: 1312 (520h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Call of a user-defined keyboard for logging in a user and the corresponding password.

14.9.23 User Logout

Number of the Function	: 1281 (501h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Use this function to log out the currently active user and user level. This special function deactivates all user levels, all access bit tags are reset.

14.10Unit of Measurement Functions

14.10.1 Unit of Measurement Functions

The Value Entry / Display object can be displayed with a unit of measurement.

Two units of measurement can be displayed for each VALUE tag together with its own conversion factor. The tag can be assigned a unit group. The following functions allow the individual unit groups to be switched on and off. There are 10 unit groups that can be assigned any number of tags. A tag can only be assigned to one unit group.

When one of the following functions is pressed, the relevant tags will be recalculated and displayed with the appropriate unit of measurement.

The setting is also retained when the MMI is switched off.

14.10.2 Unit Group 1..10 On/Off

Numbers of the Functions	: 1793 (701h) to 1802 (70Ah)
	: Group 1: 1793 (701h)
	: Group 2: 1794 (702h)
	: ...
	: Group 10: 1802 (70Ah)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Once the MMI is switched on the first time, all unit groups are set to mode A. Every call of the special function "Unit Group x On/Off" switches between mode A or B of the group concerned.

The setting is also retained when the MMI is switched off.

14.11 Recipe Functions

14.11.1 Recipe Functions

Change Recipe Entry Name

Change Recipe Entry Name userdef.

Clear Recipe Entry

Copy Recipe Entry

Copy to next

Display: Copy Entry

Display: Loaded Entry

Display: Selected Entry

Find Next Recipe Entry

Find Next Recipe Entry (start)

Find Recipe Entry

Find Recipe Entry (start)

Find Recipe Entry userdef.

Find Rcp Entry userdef. (start)

First Line

Last Line

Line Down

Line Up

Load Recipe Entry

New to next

New to next userdef.

Page Down

Page Up

Paste Recipe Entry

Protect Recipe Entry

Restore Default Values

Save Recipe Entry

Save Recipe Entry As

Save Recipe Entry As userdef.

Save As/Load Recipe Entry

Save As/Load Recipe Entry userdef.

Save As to next

Save As to next userdef.

Select Loaded Recipe Entry

14.11.2 Change Recipe Entry Name

Number of the Function	: 2055 (807h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Triggered on the Panel:
Starting this function on the panel will call up the alphanumeric keyboard (Alpha numeric) for entering the recipe entry name. This function enables the name of the selected recipe entry to be changed.

Triggered from the PLC:
For this the corresponding PLC text data block must be written with the new name. Only after this can this function be called. After calling the special function refer to chapter Initiating functions from the PLC the name in the PLC text data block is transferred to the recipe file and updated on screen. See also "Control data block" in GRS.HLP.

The name of the recipe object is specified as a parameter when the Function Key is defined. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Change Recipe Entry Name userdef., Store the actual Recipe Entry-Name in Block, Protect Recipe Entry, First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.3 Change Recipe Entry Name userdef.

Number of the Function	: 2070 (816h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Triggered on the Panel:
Starting this function on the panel will call up the user defined keyboard for entering the recipe entry name. This function enables the name of the selected recipe entry to be changed.

Triggered from the PLC:
For this the corresponding PLC text data block must be written with the new name. Only after this can this function be called. After calling the special function refer to chapter Initiating functions from the PLC the name in the PLC text data block is transferred to the recipe file and updated on screen. See also "Control data block" in GRS.HLP.

The name of the recipe object is specified as a parameter when the Function Key is defined. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Change Recipe Entry Name, Store the actual Recipe Entry-Name in Block, Protect Recipe Entry, First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.4 Copy Recipe Entry

Number of the Function	: 2051 (803h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables the settings (tag values and recipe entry name) of the selected recipe entry to be written to the Clipboard. The function can then be used to insert the values at any new position in the recipe object. The data in the Clipboard is retained when executing the functions Paste Recipe Entry, First Line, Last Line, Line Down, Line Up, Page Down, Page Up and Paste Recipe Entry. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.5 Copy to next

Number of the Function	: 2081 (821h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

With this function, the settings (tag values and recipe entry name) of the selected recipe entry are saved under the same name in the next free entry (without recipe entry name) in the recipe file.

14.11.6 Clear Recipe Entry

Number of the Function	: 2053 (805h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables the tag values of the selected recipe entry to be cleared in the recipe file, i.e. all tag values are set to '0' and the recipe name deleted. This function only affects the selected recipe if it has been loaded (see Load Recipe Entry). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Restore Default Values, Protect Recipe Entry, First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.7 Display: Copy Entry

Number of the Function	: 2064 (810h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes (see Edit)
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables the name of the recipe that was copied to the Clipboard to be shown (see also Copy Recipe Entry). This function can only be used with a confirmation check when copying recipes (see also Confirmation on use of special function...). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

14.11.8 Display: Loaded Entry

Number of the Function	: 2066 (812h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes (see Edit)
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables the name of the currently loaded recipe to be shown (see also Load Recipe Entry). This function can only be used with confirmation checks (see also Confirmation on use of special function...). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

14.11.9 Display: Selected Entry

Number of the Function	: 2065 (811h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: No
Function available in keyboard masks	: Yes (see Edit)
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables the name of the selected recipe entry to be shown (see also First Line, Last Line, Line Down, Line Up, Page Down, Page Up). This function can only be used with confirmation checks (see also Confirmation on use of special function...). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

14.11.10Find Next Recipe Entry

Number of the Function	: 2069 (815h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used for finding the next recipe entry. The function will search for the string entered using the Find Recipe Entry function. This entry is highlighted if a recipe entry name or part of it matches the search string. This function can be carried out several times, with the search always starting from the currently selected recipe entry. If no other entry is found with this name, the currently selected entry remains highlighted. This function is only available for a Recipe object in Enhanced Mode.

14.11.11Find Next Recipe Entry (start)

Number of the Function	: 2075 (81Bh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used for finding the next recipe entry. The function will search for the string entered using the Find Recipe Entry (start) function. This entry is highlighted if a recipe entry name from the first character matches with the search string. This function can be carried out several times, with the search always starting from the currently selected recipe entry. If no other entry is found with this name, the currently selected entry remains highlighted. This function is only available for a Recipe object in Enhanced Mode.

14.11.12Find Recipe Entry

Number of the Function	: 2068 (814h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used for finding a recipe entry. The alphanumeric keyboard is displayed for entering the search string. The search is always started at the beginning of the list. This entry is selected if a recipe entry name or part of it matches the search string. The function Find Next Recipe Entry is provided in order to find other entries in the list. This function is only available for a Recipe object in enhanced mode (see Enhanced Mode).

See also Find Recipe Entry userdef.

14.11.13Find Recipe Entry (start)

Number of the Function	: 2074 (81Ah)

Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used for finding a recipe entry. The alphanumeric keyboard is displayed for entering the search string. The search is always started at the beginning of the list. This entry is selected if a recipe entry name from the first character matches the search string. The function Find Next Recipe Entry (start) is provided in order to find other entries in the list. This function is only available for a Recipe object in Enhanced Mode.

See also Find Recipe Entry userdef.

14.11.14Find Recipe Entry userdef.

Number of the Function	: 2073 (819h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used for finding a recipe entry. The user defined keyboard is displayed for entering the search string. The search is always started at the beginning of the list. This entry is selected if a recipe entry name or part of it matches the search string. The function Find Next Recipe Entry is provided in order to find other entries in the list. This function is only available for a Recipe object in Enhanced Mode.

See also Find Recipe Entry

14.11.15Find Rcp Entry userdef. (start)

Number of the Function	: 2076 (81Ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used for finding a recipe entry. The user defined keyboard is displayed for entering the search string. The search is always started at the beginning of the list. This entry is selected if a recipe entry name from the fist character matches the search string. The function Find Next Recipe Entry (start) is provided in order to find other entries in the list. This function is only available for a Recipe object in enhanced mode Enhanced Mode.

See also Find Recipe Entry (start)

14.11.16First Line

Number of the Function	: 2060 (80Ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is used to move the selection bar to the first recipe entry in the list. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.17Last Line

Number of the Function	: 2061 (80Dh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is used to move the selection bar to the last recipe entry in the list. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.18Line Down

Number of the Function	: 2057 (809h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is used to select the next recipe entry in the list. The list is moved up one line when the selection bar reaches the bottom of the window. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.19Line Up

Number of the Function	: 2056 (808h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No

Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is used to select the previous recipe entry in the list. The list is moved down one line when the selection bar reaches the top of the window. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.20Load Recipe Entry

Number of the Function	: 2050 (802h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables the currently selected recipe entry to be loaded from the recipe file. The tag values (see Recipe Tags), the current recipe entry name and the current recipe entry number are sent to the PLC as required. **No values are saved** in the previously loaded recipe. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note: The loop of the MMI is interrupted for loading of a recipe entry and continued only again if all recipe tags are transferred to the PLC!

The detailed description of an external recipe change by the PLC is in chapter Recipe commands from the plc in GRS.HLP.

See also Save As/Load Recipe Entry, Store the actual Recipe Entry Number in Tag, Store the actual Recipe Entry-Name in Block, First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.21New to next

Number of the Function	: 2079 (81Fh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No

Function available in loop scripts	: No
Function available in event scripts	: No

When the function is triggered on the panel, the alphanumeric keyboard (Alpha numeric) appears for entering the recipe entry name. With this function, the tag preset values are stored under the entered name in the next free entry (without recipe entry name) in the recipe file. This function has no effect on the currently loaded recipe entry (no change in the data).

See also New to next userdef.

14.11.22New to next userdef.

Number of the Function	: 2080 (820h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Selected User Defined Keyboards
Function available in keyboard masks	: Yes
Function available in loop scripts	: No
Function available in event scripts	: No

When this function is triggered on the panel, a User Defined Keyboard appears for entering the recipe entry name. With this function, the tag preset values are stored under the entered name in the next free entry (without recipe entry name) in the recipe file. This function has no effect on the currently loaded recipe entry (no change in the data).

See also New to next

14.11.23Page Down

Number of the Function	: 2059 (80Bh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is used to move the selection bar one page (window height) down. The selection bar is then positioned in the list of all recipe entries on the top line or at the first entry if the window is not full. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also First Line, Last Line, Line Up, Line Down, Page Down, Page Up

14.11.24 Page Up

Number of the Function	: 2058 (80Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is used to move the selection bar one page (window height) up. The selection bar is then positioned in the list of all recipe entries on the bottom line or at the last entry if the window is not full. This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also First Line, Last Line, Line Up, Line Down, Page Down, Page Up

14.11.25 Paste Recipe Entry

Number of the Function	: 2052 (804h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function overwrites the currently selected recipe entry with the tag values and recipe entry name of the Clipboard data. The clipboard data must be produced with the Copy Recipe Entry function. The data in the Clipboard is retained when executing the functions First Line, Last Line, Line Down, Line Up, Page Down, Page Up and Paste Recipe Entry. Copying recipe entries is supported only within the same recipe management. This function only affects the selected recipe if it has been loaded (see Load Recipe Entry). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Recipe management, Protect Recipe Entry

14.11.26Protect Recipe Entry

Number of the Function	: 2048 (800h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables write protection for the currently selected recipe entry of the Recipe object to be activated or deactivated. This depends on the settings made in No. of Recipe Entries, No. of Recipe Entries are write protectable by Users of Level 0 and No. of Recipe Entries are write protectable by Users of all Levels.

The write protection is considered with the following functions Change Recipe Entry Name, Clear Recipe Entry, Paste Recipe Entry, Restore Default Values, Save Recipe Entry, Save Recipe Entry As, Save As/Load Recipe Entry.

Write protection activated:
The values of this recipe entry cannot be overwritten until write protection has been removed.

Write protection not activated:
The values will be overwritten when executing the functions specified above. The values of a Recipe object in Standard Mode are also overwritten if the recipe is changed.

See also Recipe management, Write Protect (standard mode) and Write Protect (enhanced mode), First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.27Restore Default Values

Number of the Function	: 2054 (806h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function enables the tag values of the selected recipe entry to be set to the default values (see **Preset Values** in chapter Definition of Tags) of the tags. The recipe entry name is not changed. This function only affects the selected recipe if it has been loaded (see Load Recipe Entry). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Clear Recipe Entry, Protect Recipe Entry

14.11.28 Save Recipe Entry

Number of the Function	: 2049 (801h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function stores the current tag values at the currently loaded recipe entry into the recipe file.

Note:
This function is executed only if the loaded recipe entry is not write protected.

See also Load Recipe Entry, Save Recipe Entry As, Save As/Load Recipe Entry, Protect Recipe Entry, Write Protect (standard mode), Write Protect (enhanced mode)

14.11.29 Save Recipe Entry As

Number of the Function	: 2063 (80Fh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Starting this function on the panel will call up the alphanumeric keyboard (Alpha numeric) for entering the recipe entry name. This function stores the current tag values at the selected recipe entry position into the recipe file. This function has no effect on the loaded recipe entry (no change of data). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Save Recipe Entry As userdef., Load Recipe Entry, Save Recipe Entry, Save As/Load Recipe Entry, Protect Recipe Entry

14.11.30 Save Recipe Entry As userdef.

Number of the Function	: 2071 (817h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Starting this function on the panel will call up the user defined keyboard for entering the recipe entry name. This function stores the current tag values at the selected recipe entry position into the recipe file. This function has no effect on the loaded recipe entry (no change of data). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Save Recipe Entry As, Load Recipe Entry, Save Recipe Entry, Save As/Load Recipe Entry, Protect Recipe Entry

14.11.31 Save As/Load Recipe Entry

Number of the Function	: 2067 (813h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Starting this function on the panel will call up the alphanumeric keyboard (Alpha numeric) for entering the recipe entry name. This function stores the current tag values at the selected recipe entry position into the recipe file. The selected position then becomes the currently loaded recipe entry (see Load Recipe Entry). This function has no effect on the previously loaded recipe entry (no change of data). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Save As/Load Recipe Entry userdef., Load Recipe Entry, Save Recipe Entry, Save Recipe Entry As, Protect Recipe Entry, First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.32 Save As/Load Recipe Entry userdef.

Number of the Function	: 2072 (818h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

Starting this function on the panel will call up the user defined keyboard for entering the recipe entry name. This function stores the current tag values at the selected recipe entry position into the recipe file. The selected position then becomes the currently loaded recipe entry (see Load Recipe Entry). This function has no effect on the previously loaded recipe entry (no change of data). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

Note:
This function is executed only if the selected recipe entry is not write protected.

See also Save As/Load Recipe Entry, Load Recipe Entry, Save Recipe Entry, Save Recipe Entry As, Protect Recipe Entry, First Line, Last Line, Line Down, Line Up, Page Down, Page Up

14.11.33 Save As to next

Number of the Function	: 2077 (81Dh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

When the function is triggered on the panel, the alphanumeric keyboard (Alpha numeric) appears for entering the recipe entry name. With this function, the current tag data is saved under the entered name in the next free recipe entry in the recipe file. This function has no effect on the currently loaded recipe entry (no change in the data). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

See also Save As to next userdef

14.11.34Save As to next userdef.

Number of the Function	: 2078 (81Eh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Parameter value (see Function Key)	: Selected User Defined Keyboards
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

When this function is triggered on the panel, a User Defined Keyboard appears for entering the recipe entry name. With this function, the current tag data is saved under the entered name in the next free recipe entry in the recipe file. This function has no effect on the currently loaded recipe entry (no change in the data). This function is only available for a recipe object in enhanced mode (see also enhanced mode).

See also Save As to next

14.11.35Select Loaded Recipe Entry

Number of the Function	: 2062 (80Eh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: name of the Recipe object (the object must be in the same mask)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function returns the selection bar in the display to the currently loaded recipe entry (see also First Line, Last Line, Line Down, Line Up, Page Down, Page Up). This function is only available for a Recipe object in Enhanced mode (see Enhanced Mode).

14.12Graph Start/Stop Functions

14.12.1 Graph Start/Stop Functions

The following functions are used to start and stop the plotting of graph blocks.

The plotting of graph blocks can also be started and stopped via the Starting / Stopping Settings.

The Graph Functions group contains other special functions for Graph objects.

14.12.2 Start/Stop Graph 0..99

Number of the Functions	: 2304 (900h) to 2403 (963h)
	: Graph 0: 2304 (900h)
	: Graph 1: 2305 (901h)
	: ...
	: Graph 99: 2403 (963h)
Executable from PLC	: Yes (see Initiating functions from the PLC)
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function starts and stops the graph block with the corresponding number.

If plotting was started when the MMI was switched off, plotting will be automatically restarted the next time the MMI is switched on.

See also Define Graph Blocks and Graph

14.13Graph Functions

14.13.1 Graph Functions

This group contains all special functions used in conjunction with Graph Objects.

The Graph Start/Stop Functions group contains the special functions for starting and stopping graph blocks.

see also:

Delete Archive File

Delete Graph Buffer

Display Time Graph Ruler

Display Time Graph End

Display Time Graph Start

Load Archive File

Save Archive File

Save Archive File As

Scroll Left

Scroll Left (Ruler)

Scroll Left 1 (Ruler)

Scroll Right

Scroll Right (Ruler)

Scroll Right 1 (Ruler)

Scroll to End

Scroll to Start

Scroll to End (Ruler)

Scroll to Start (Ruler)

Start/Stop Autoscroll

Zoom In

Zoom Out

14.13.2 Delete Archive File

Number of the Function	: 3091 (C13h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Block Number (see Define Graph Blocks)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is not available with all device types.

This function allows archive files (*.gdb) to be deleted. The Save Archive File As and Load Archive File functions can be used to save and load graph blocks. The function displays a list of all archive files for this graph block.

Note:
The function can only be used if plotting has stopped (see Graph Start/Stop Functions).

See also Define Graph Blocks and Archive File (*.GDB)

14.13.3 Delete Graph Buffer

Number of the Function	: 3092 (C14h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Name of the graph (see Define Graph Blocks)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Clears all recorded values in the data buffer of this graph data block.

14.13.4 Display Time Graph Ruler

Number of the Function	: 3074 (C02h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Date / Time Format
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows the time and date of the current ruler position in the selected time/date format.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Display format of time and date , Ruler Settings

14.13.5 Display Time Graph End

Number of the Function	: 3073 (C01h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Date / Time Format
Function available in standard masks	: Yes
Function available in keyboard masks	: No

Function available in loop scripts	: No
Function available in event scripts	: No

This function shows the time of the end position of the currently visible range within the graph object in the selected time/date format.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Display format of time and date

14.13.6 Display Time Graph Start

Number of the Function	: 3072 (C00h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Date / Time Format
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function shows the time of the starting position of the currently visible range within the graph object in the selected time/date format.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Display format of time and date

14.13.7 Load Archive File

Number of the Function	: 3084 (C0Ch)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Block Number (see Define Graph Blocks)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is not available with all device types.

This function enables archive files (*.GDB) to be loaded. The Save Archive File As function allows graph blocks to be saved. The function displays a list of all archive files for this graph block.

Note:
Current measured values are overwritten when a graph block file is loaded. The function can only be used if plotting has stopped (see Graph Start/Stop Functions).

See also Define Graph Blocks and Archive File (*.GDB)

14.13.8 Save Archive File

Number of the Function	: 3093 (C15h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Block Number (see Define Graph Blocks)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: Yes
Function available in event scripts	: Yes
Note	: Not all device types support this function.

This function enables the current measured values of the selected graph data block to be stored in an archive file (*.GDB). When the function is activated, an archive file is created with the Directory. When more than one archive file is used (see Number of Archives), the number in the archive name is changed. Every time the archive is saved, the number is incremented by 1, until the set number of archives is reached. The first archive file is then overwritten.

The data can be reloaded with the Load Archive File special function and displayed in the Graph-Object.

See also Save Archive File As, Define Graph Blocks, Archive File Format (*.GDB) and Delete Archive File

14.13.9 Save Archive File As

Number of the Function	: 3085 (C0Dh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Block Number (see Define Graph Blocks)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function is not available with all device types.

This function saves the current measured values of the selected graph block in an archive file (*.GDB). Starting this function will call up the alphanumeric keyboard for entering a file name. The directory is selected in the Storage Settings dialog.

The data can be reloaded using the special function Load Archive File.

See also Define Graph Blocks and Archive File (*.GDB)

14.13.10Scroll Left

Number of the Function	: 3078 (C06h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Percentage of visible range
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the visible range of the graph to the left. The range is scrolled by the percentage specified as parameter 2, 100% corresponding to the entire width of the object window.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Scroll Right, Scroll to Start, Scroll to End

14.13.11Scroll Left (Ruler)

Number of the Function	: 3075 (C03h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Percentage of visible range
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the ruler to the left by the percentage specified as parameter 2, 100% corresponding to the entire width of the object window.

The visible range is scrolled as required so that the ruler is constantly visible.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Ruler Settings, Scroll Left 1 (Ruler), Scroll Right (Ruler) , Scroll Right 1 (Ruler) , Scroll to Start (Ruler), Scroll to End (Ruler)

14.13.12Scroll Left 1 (Ruler)

Number of the Function	: 3080 (C08h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Object Number (see No. of Graph Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the ruler by one measured value to the left. The visible range is scrolled as required so that the ruler is constantly visible.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Ruler Settings, Scroll Left 1 (Ruler), Scroll Right (Ruler) , Scroll Right 1 (Ruler) , Scroll to Start (Ruler), Scroll to End (Ruler)

14.13.13Scroll Right

Number of the Function	: 3079 (C07h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Percentage of visible range
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the currently visible range of the graph to the right by the percentage specified as parameter 2, 100% corresponding to the entire width of the object window.

The range is scrolled by the percentage specified as parameter 2.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Scroll Left, Scroll to Start, Scroll to End

14.13.14Scroll Right (Ruler)

Number of the Function	: 3076 (C04h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Percentage of visible range
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the ruler to the right by the percentage specified as parameter 2, 100% corresponding to the entire width of the object window.

The visible range is scrolled as required so that the ruler is constantly visible.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Ruler Settings, Scroll Left, Scroll Left 1 (Ruler), Scroll Right 1 (Ruler) , Scroll to Start (Ruler), Scroll to End (Ruler)

14.13.15Scroll Right 1 (Ruler)

Number of the Function	: 3081 (C09h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Object Number (see No. of Graph Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the ruler by one measured value to the right. The visible range is scrolled as required so that the ruler is constantly visible.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Ruler Settings, Scroll Left, Scroll Left 1 (Ruler), Scroll Right (Ruler) , Scroll to Start (Ruler), Scroll to End (Ruler)

14.13.16Scroll to End

Number of the Function	: 3082 (C0Ah)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Object Number (see No. of Graph Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the currently visible range of the graph to the end of the measured values, i.e. to the most recent measured value.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Scroll Left, Scroll Right, Scroll to Start

14.13.17Scroll to Start

Number of the Function	: 3083 (C0Bh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Object Number (see No. of Graph Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the currently visible range of the graph to the start of the measured values, i.e. to the oldest measured value.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Scroll Left, Scroll Right, Scroll to End

14.13.18Scroll to End (Ruler)

Number of the Function	: 3088 (C10h)
Executable from PLC	: No
Function with ON/OFF state	: No

Parameter value (see Function Key)	: Graph Object Number (see No. of Graph Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the ruler to the end of the measured values, i.e. to the most recent measured value. The visible range is scrolled as required so that the ruler is constantly visible.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Ruler Settings, Scroll Left, Scroll Left 1 (Ruler), Scroll Right (Ruler) , Scroll Right 1 (Ruler) , Scroll to Start (Ruler)

14.13.19 Scroll to Start (Ruler)

Number of the Function	: 3089 (C11h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Graph Object Number (see No. of Graph Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function scrolls the ruler to the start of the measured values, i.e. to the oldest measured value. The visible range is scrolled as required so that the ruler is constantly visible.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Ruler Settings, Scroll Left, Scroll Left 1 (Ruler), Scroll Right (Ruler) , Scroll Right 1 (Ruler) , Scroll to End (Ruler)

14.13.20 Start/Stop Autoscroll

Number of the Function	: 3090 (C12h)
Executable from PLC	: No
Function with ON/OFF state	: Yes
Parameter value (see Function Key)	: Graph Object Number (see No. of Graph Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No

Function available in loop scripts	: No
Function available in event scripts	: No

The visible range is automatically refreshed by default, i.e. the graph is refreshed according to the Scrolling Graph Display each n % of Graph. If this function is deactivated, the content of the graph will no longer be scrolled. This function remains active until either the function is switched on again or until the displayed values are so old that they are no longer contained in the data buffer (as defined by No. of Samples, the data buffer is designed as a ring-type buffer !!!).

Current measured values are automatically refreshed after a mask change.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Scrolling Graph Display each n % of Graph

14.13.21Zoom In

Number of the Function	: 3086 (C0Eh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Zoom In factor
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used to enlarge or extend the graph along the X axis by the factor specified as parameter 2. The graph is displayed by default with the Zooming Settings described in section X Axis. The Zoom Out function is used to reduce or compress the display.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Zoom Out, Zooming Settings of the X Axis, Zooming Settings of the Y Axis

14.13.22Zoom Out

Number of the Function	: 3087 (C0Fh)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: 1: Graph Object Number (see No. of Graph Object) 2: Zoom Out factor
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No

This function is used to shorten or compress the graph along the X axis by the factor specified as parameter 2. The graph is displayed by default with the Zooming Settings described in section X Axis. The graph can be enlarged or extended using the Zoom In function.

Note:
The graph object specified under parameter 1 must be in the same mask as this Function Key.

See also Graph, Zoom In, Zooming Settings of the X Axis, Zooming Settings of the Y Axis

14.14 Parameter List

14.14.1 Parameter List Functions

These functions are used for selecting and sorting the entries in a Parameter List Object.

see also:

First line

Last Line

Line down

Line up

Page down

Page up

Print Parameter List

Print Parameter List (no Header)

Show Tag Help

Sort ascend/descend

Sort by Description

Sort by Number

14.14.2 First Line

Number of the Function	: 3588 (E04h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Moves to the first entry in the parameter list.

See also Last Line, Line down, Line up, Page down, Page up

14.14.3 Last Line

Number of the Function	: 3589 (E05h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Moves to the last entry in the parameter list.

See also First line, Line down, Line up, Page down, Page up

14.14.4 Line down

Number of the Function	: 3585 (E01h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Moves to the next entry in the parameter list.

See also Line up, First line, Last Line, Page down, Page up

14.14.5 Line up

Number of the Function	: 3584 (E00h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No

Function available in event scripts	: Yes

Moves to the previous entry in the parameter list.

See also Line down, First line, Last Line, Page down, Page up

14.14.6 Page down

Number of the Function	: 3587 (E03h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Moves to the next page in the parameter list.

See also Page up, First line, Last Line, Line down, Line up

14.14.7 Page up

Number of the Function	: 3586 (E02h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes

Moves to the next page in the parameter list.

See also Page down, First line, Last Line, Line down, Line up

14.14.8 Show Tag Help

Number of the Function	: 3590 (E06h)
Executable from PLC	: No
Function with ON/OFF state	: No
Function available in standard masks	: Yes
Function available in keyboard masks	: No

Function available in loop scripts	: No
Function available in event scripts	: Yes

Shows the Help Text for the currently displayed entry in the Help Window Object of the current mask. If a Help window is not defined in the current mask, the function has no effect.

14.14.9 Sort ascend/descend

Number of the Function	: 3593 (E09h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes
Note	: Not all device types support this function.

Sort parameter list in ascending and descending order according to the sort criteria (see Sort by Description or Sort by Number

14.14.10Sort by Description

Number of the Function	: 3592 (E08h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes
Note	: Not all device types support this function.

Sort parameter list according to the tag description (see Description Text).

See also Sort by Number, Sort ascend/descend

14.14.11Sort by Number

Number of the Function	: 3591 (E07h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	Name of parameter list(see also Parameter List Object)
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes
Note	: Not all device types support this function.

Sort parameter list according to the tag number (see Number).

See also Sort by Description, Sort ascend/descend

14.15Camera Functions

14.15.1 Camera Functions

These functions are used for starting and stopping the camera object. The Image functions can also be used to load and save pictures in the camera object.

Start/Stop Camera0..29

Refresh

Image Save

Image Save As

Image Load

Image Load From

14.15.2 Start/Stop Camera 0..29

Number of the Function	: 3940 (F64h) – 3969 (F81h)
Executable from PLC	: No
Function with ON/OFF state	: Yes
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes
Note	: Not all device types support this function.

Starts or stops the camera object. The last picture is retained after a stop.

14.15.3 Refresh

Number of the Function	: 3841 (F01h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Camera objekt nummer
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes
Note	: Not all device types support this function.

If the camera object has started, a new picture is loaded and displayed from the source irrespective of the refresh time.

14.15.4 Image Save

Number of the Function	: 3844 (F04h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Camera objekt nummer
Parameter value (see Function Key)	: Char-Array with path to where the file is to be saved.
Function available in standard masks	: Yes

Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes
Note	: Not all device types support this function.

If the camera object has started, the currently displayed picture of the camera object is displayed in BMP format. The destination directory is defined with the second parameter. The file name consists of time and date in the following format: DD_MM_YYYY-hh_mm_ss.BMP.

Note:
Local and network directories can be used in the path definition.

See also Image Save As, Image Load, Image Load From

14.15.5 Image Save As

Number of the Function	: 3842 (F02h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Camera objekt nummer
Parameter value (see Function Key)	: Char-Array with path to where the file is to be saved.
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

If the camera object is started, the currently displayed picture is saved by the camera object in BMP format. The destination directory is defined with the second parameter. The file name must be entered using the alphanumeric keyboard (without file suffix BMP).

Note:
Local and network directories can be used in the path definition.

See also Image Save, Image Load, Image Load From

14.15.6 Image Load

Number of the Function	: 3845 (F05h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Camera objekt nummer
Parameter value (see Function Key)	: Char-Array with path, file name and file suffix.
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: Yes
Note	: Not all device types support this function.

Loads the picture defined with the second parameter and displays it in the camera object. The following file types are permissible: GIF, JPEG and BMP. If the camera object was already started, it will be stopped.

Note:
Local, network or http directories can be used in the path definition.

See also Image Save, Image Save As, Image Load From

14.15.7 Image Load From

Number of the Function	: 3843 (F03h)
Executable from PLC	: No
Function with ON/OFF state	: No
Parameter value (see Function Key)	: Camera objekt nummer
Parameter value (see Function Key)	: Char-Array with path.
Function available in standard masks	: Yes
Function available in keyboard masks	: No
Function available in loop scripts	: No
Function available in event scripts	: No
Note	: Not all device types support this function.

Shows a selection list of the picture files in the path that is defined as the second parameter with the following format: GIF, JPEG and BMP. The selected file is then displayed in the camera object. If the camera object was already started, it will be stopped.

Note:
Local and network directories can be used in the path definition.

See also Image Save, Image Save As, Image Load

15 Script

15.1 Overview

Scripts can be used to execute several Groups or actions. They consist of text-based instructions that are similar to a program or macro language.

Syntax check

The syntax check is carried out in the Compiler. The following three types of scripts are possible: Loop Scripts, Functions of Loopscript and Event Scripts.

LoopScript

Loop scripts are processed once in each cycle (loop) of the MMI and are not mask-related.

Note:
Loop scripts can only be used if the option 'Using Loop Scripts' is activated (see Project Settings).

Tags

Normally only pure read tags and write tags can be used as tags.

Note:
Write/read tags are not available in loop scripts!

Call

The loop scripts do not need to be called. They are executed automatically after the MMI is started.

Note:

The creation of loop scripts must follow particular guidelines. All loop scripts should begin with an if-condition, so that the entire script does not have to be processed in every cycle (loop).

Caution:
The number of commands in all loop scripts has a direct effect on the performance of the MMI. The loop scripts must be kept **as small as possible** so as to prevent any losses in speed. Depending on the device type concerned, only a certain number of compiled script lines are available. The compiler shows the number of lines as information and always generates an error message if the maximum number of lines is exceeded.

Functions of Loop Script

Command sequences that are used at several points in loop scripts should be defined in subfunctions. Structuring subfunctions allows for greater clarity. These functions can then also be used for other scripts. No parameters can be set for the subfunctions.

Tags

The same restrictions apply as for Loop Scripts.

Call

Subfunctions can be called from loop scripts or other subfunctions.

Event Script

Event scripts are explicitly carried out once by the user. They are therefore mask-related.

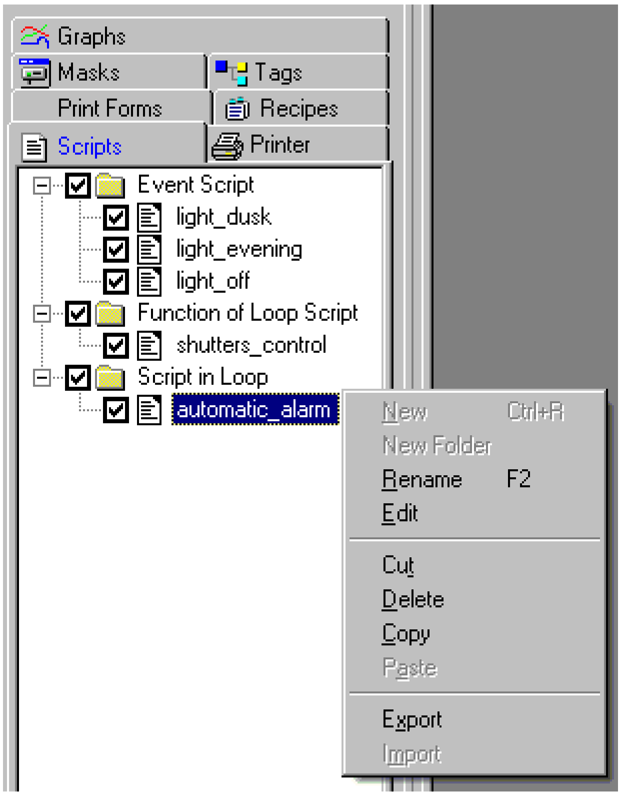
Tags

No restrictions apply with regard to the data direction.

Call

Event scripts are called by means of special functions (see Call Script Function, Call 2 Script Function, Call Script Function on Mask Entry, Key 'RET' and 'Call Script Function').

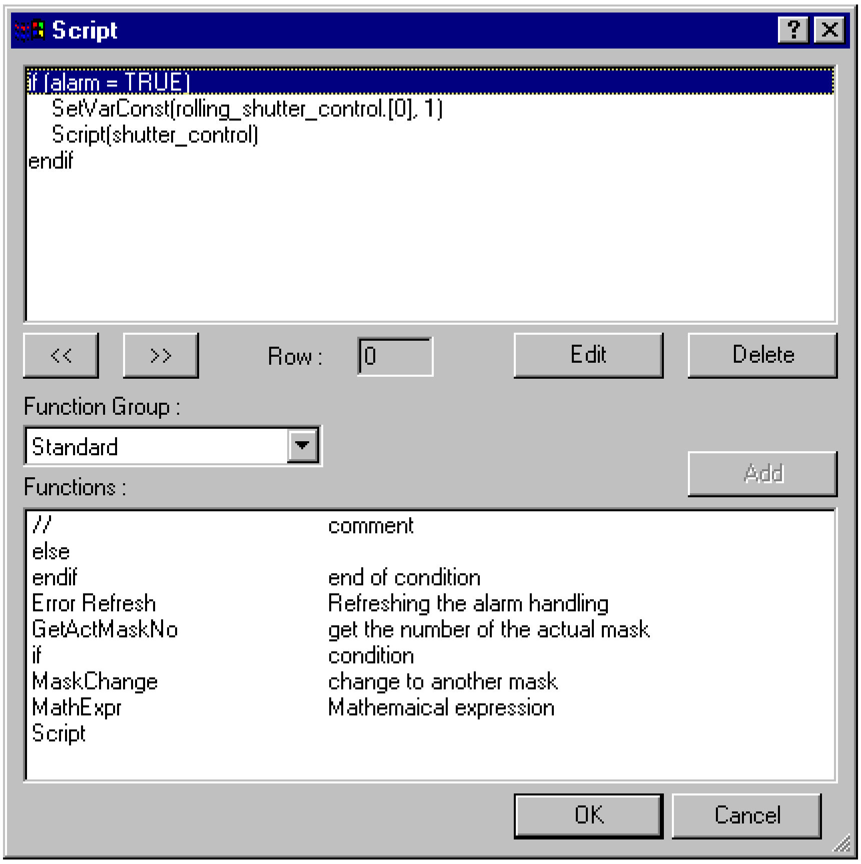
Scripts in the project overview



Script active	Activate / deactivate script In order to process a script on the MMI it must be active. If a script is deactivated, it will not be compiled and not assigned memory in the compiled code. It will not be taken into account.
New	Insert new script of current type. See Loop Script, Functions of Loopscript and Event Script.
New Folder	Create a new folder
Rename	Assign a new name to the selected script
Edit	edit current script
Cut	Copy the selected script to the Clipboard and then delete it
Delete	Delete the selected script
Copy	Copy the selected script to the Clipboard
Paste	Paste the script stored in the Clipboard
Export	Export the select script to a text file
Import	Import a script from a text file

15.2 Edit

15.2.1 Edit



```
if (alarm = TRUE)
   SetVarConst(rolling_shutter_control.[0], 1)
   Script(shutter_control)
endif
```

//	comment
else	
endif	end of condition
Error Refresh	Refreshing the alarm handling
GetActMaskNo	get the number of the actual mask
if	condition
MaskChange	change to another mask
MathExpr	Mathemaical expression
Script	

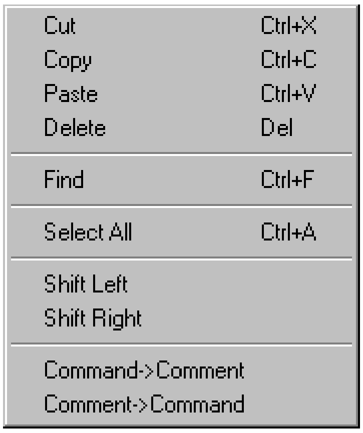
The dialog is divided into two areas. The upper area shows the currently edited script. This is a straightforward display in which one or several lines can be selected. The lower area shows the groups and functions for selection and for insertion into the script.

Note:
The functions Copy/Cut/Paste are supported via the Clipboard (see right-click menu).

Function groups	The available functions are divided into groups.
Functions	Functions of the group concerned.
Add	To insert a function into the script, both the required position in the script and the function required from the function list must be selected. Click the 'Add' button to insert the function into the script. A function can also be added directly by double-clicking the function concerned in the function list.
Edit	Edit the selected line in the script
Delete	Delete the selected lines in the script
<<	Shifts the selected lines in the script to the left
>>	Shifts the selected lines in the script to the right
Line	Shows the line number of the currently selected line in the script

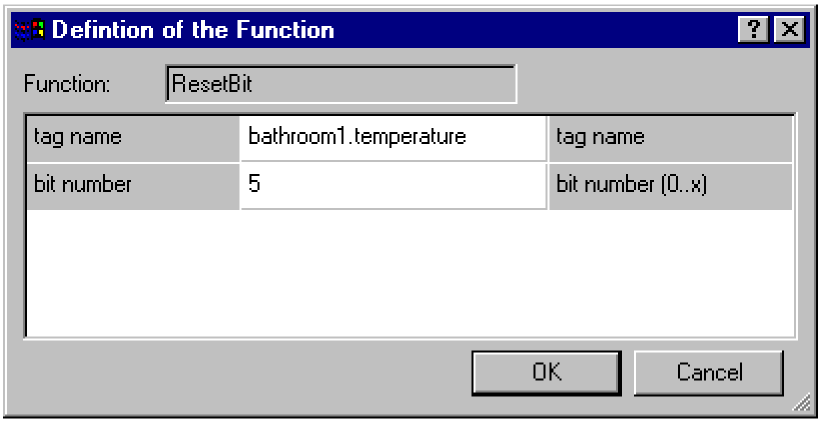
Right-Click Menu

Right-clicking the mouse on a selected script line will open the following menu that provides a number of different functions.



Cut	Copies the selected lines to the Clipboard and then deletes them from the script.
Copy	Copies the selected lines to the Clipboard.
Paste	Pastes the content of the Clipboard above the selected line in the script.
Delete	Deletes the selected lines
Find	Find a text in the script
Shift left	Shifts the selected lines in the script to the left
Shift right	Shift the selected lines in the script to the right
Command->Comment	Converts selected lines to comment lines
Comment->Command	Converts selected comment lines to command lines

15.2.2 Insert Function



Function: ResetBit

tag name	bathroom1.temperature	tag name
bit number	5	bit number (0..x)

The function parameters are shown in a list that can be edited. The columns have the following meaning:

Colum n	Column description
Left	Parameter name
Middle	Parameter value
Right	Parameter description

Clicking the left mouse button inside the central column will open a dialog that is determined by the parameter type or will directly open an entry request.

Parameter Types

Script functions can have the following parameter types:
Number
tag
time
date
weekday
month
Recipe

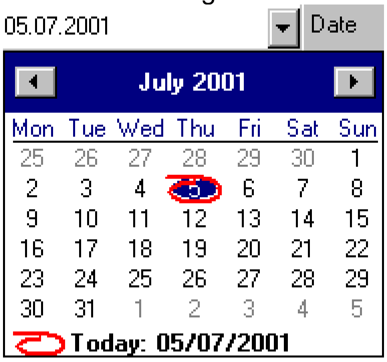
Number

These are the supported number formats:

Format	Syntax	Allowed digits	Examples	
decimal	[sign] [digits]	0..9	1245	-235
hexadecimal	0x[digits]	0..9, a..f, A..F	0x1a	0xE1b
octal	0[digits]	0..7	017	0256
floating point	[sign][digits].[digits]e[sign][digits]	0..9	1.523e-5	-2.54e10

Time/Date Definition

bmc Zeitdef.bmp}
The selected range can be modified using the arrow buttons or directly via the keyboard.

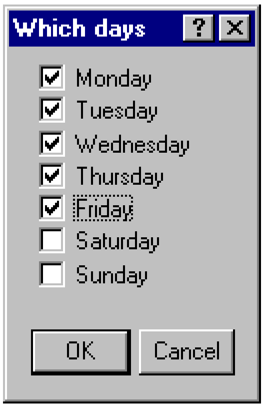

05.07.2001

Mon	Tue	Wed	Thu	Fri	Sat	Sun
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Today: 05/07/2001

The month is selected using the two arrow buttons or by clicking the required month (May) with the left mouse button. The year can also be selected by left clicking the year number required. The day can be selected directly or marked with a red circle.

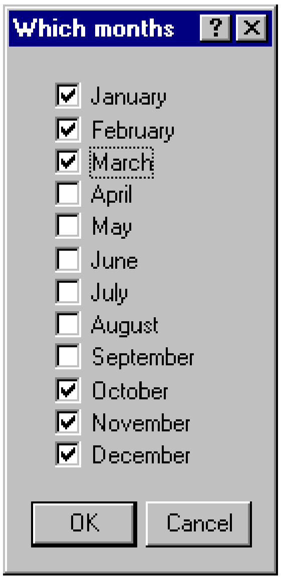
Weekday Selection



☑ Monday
☑ Tuesday
☑ Wednesday
☑ Thursday
☑ Friday
☐ Saturday
☐ Sunday

Selection of one or several weekdays.

Month Selection

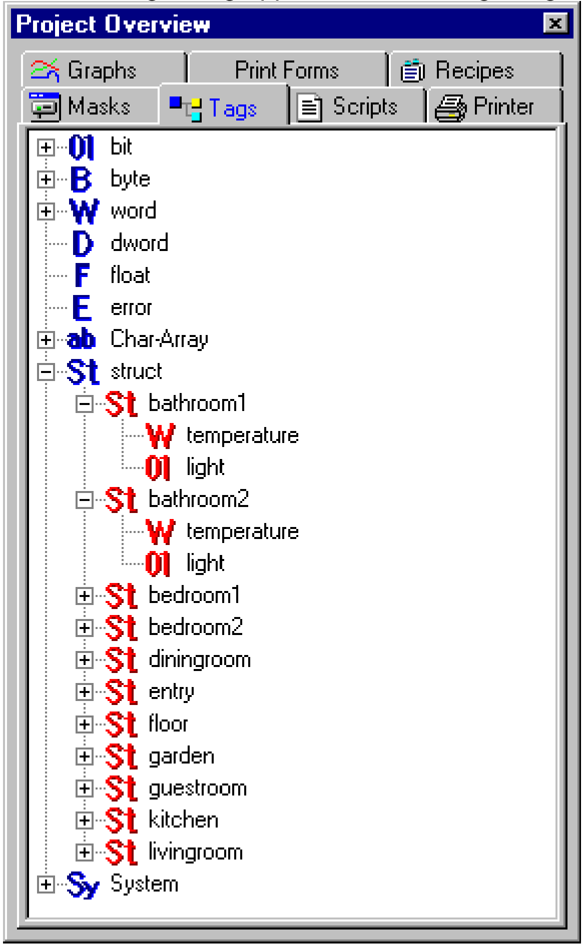


- ☑ January
- ☑ February
- ☑ March
- ☐ April
- ☐ May
- ☐ June
- ☐ July
- ☐ August
- ☐ September
- ☑ October
- ☑ November
- ☑ December

Selection of one or several months.

Tag Selection

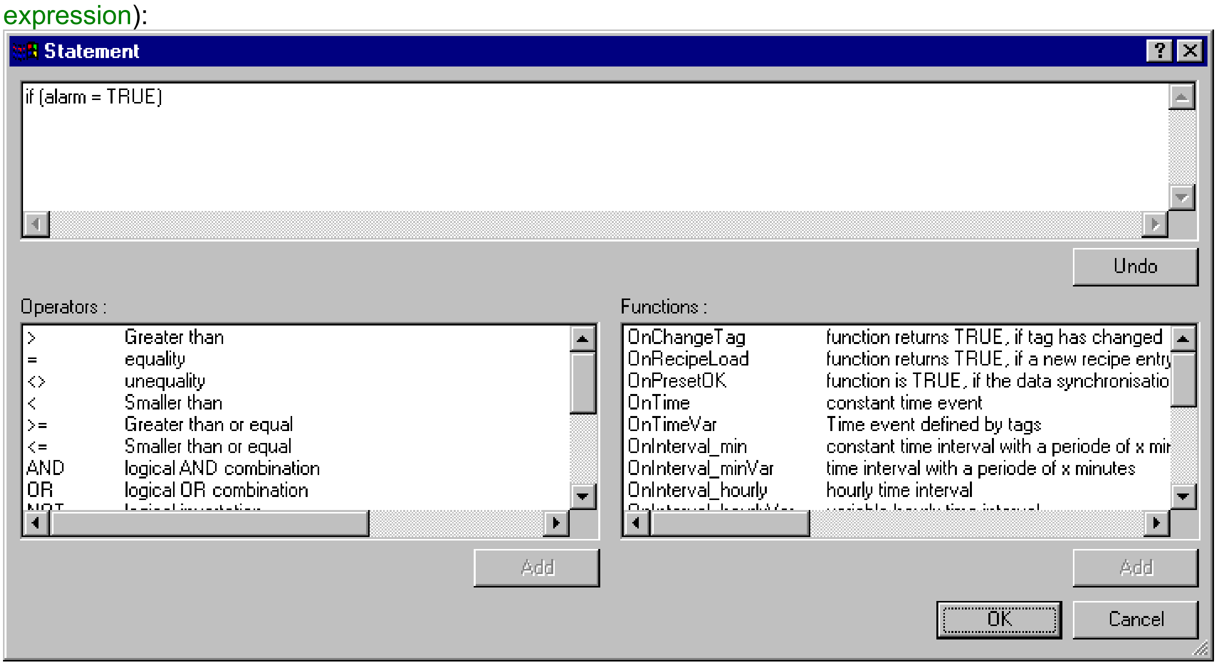
The following dialog appears for selecting a tag. The tags shown in grey cannot be selected:



```
⊞ 01 bit
⊞ B byte
⊞ W word
   D dword
   F float
   E error
⊞ ab Char-Array
⊟ St struct
    ⊟ St bathroom1
        W temperature
        01 light
    ⊟ St bathroom2
        W temperature
        01 light
    ⊞ St bedroom1
    ⊞ St bedroom2
    ⊞ St diningroom
    ⊞ St entry
    ⊞ St floor
    ⊞ St garden
    ⊞ St guestroom
    ⊞ St kitchen
    ⊞ St livingroom
⊞ Sy System
```

15.2.3 Edit mathematic Expression / Condition

The following dialog is used for editing instructions / conditions (e.g. if-condition and mathematic expression):



if (alarm = TRUE)

>	Greater than
=	equality
<>	unequality
<	Smaller than
>=	Greater than or equal
<=	Smaller than or equal
AND	logical AND combination
OR	logical OR combination

OnChangeTag	function returns TRUE, if tag has changed
OnRecipeLoad	function returns TRUE, if a new recipe entry
OnPresetOK	function is TRUE, if the data synchronisatio
OnTime	constant time event
OnTimeVar	Time event defined by tags
OnInterval_min	constant time interval with a periode of x mir
OnInterval_minVar	time interval with a periode of x minutes
OnInterval_hourly	hourly time interval

The dialog is divided up into three areas. The top window shows the current instruction that can be edited directly via the keyboard.

Current instruction

An instruction can be divided over several lines using the Return key, although this will still be considered as one instruction. With the button 'Undo', you can make undo the last input.

Operands

The bottom left window contains all available operands, which can be added to the instruction at the current cursor position by double-clicking the operand concerned or by clicking the Add button.

Functions

The lower right window contains all available functions, which can also be inserted by means of a double click or via the Add button.

When the dialog is left, the instruction undergoes a syntax check.

The adding of a Tag to the instruction is carried out via that 'Tag' item in the list of operands.

15.3 Script Functions

15.3.1 Overview Script Functions

These functions are integrated in the GRS_ firmware and cannot be extended or modified by the user. The names of these functions are always in English.

Groups

The functions are divided up into functional groups:

Standard:	Basic functions
Tag:	Tag functions
Recipe:	Different recipe functions
Special Functions:	special functions
Time:	Time functions
Operands :	Boolean and mathematic operands

Functions

Groups	Functions	Description
Standard:	//	Comment
	Error Refresh	Read error tags from the PLC and refresh in error window (see chapter Control and Status in GRS.HLP)
	GetActMaskNo	Determines the current mask number
	if, else, endif	Condition, 'untrue' case of a condition, end of a condition
	MaskChange	Mask change
	MathExpr	Mathematical expression / tag conversion
	OnChangeTag	Check tag on change
	OnPresetOK	Check whether data synchronisation was successfully carried out
	Script	Call other script
Tag:	Dec	Reduce tag value by 1
	Inc	Increase tag value by 1
	InvertBit	Invert bit within a tag
	ResetBit	Clear bit within a tag
	SetBit	Set bit within a tag
	SetVar	Assign tag value to another tag
	SetVarConst	Assign constant to a tag
	SHL	Shift bit one bit to the left
	SHR	Shift tag value one bit to the right
	SwitchLeft endless	Shift bit in tag endlessly to left If the most significant bit was reached, the process continues with the least significant bit
	SwitchLeft	Shift bit in tag to left
	SwitchRight endless	Shift bit in tag endlessly to right If the least significant bit was reached, the process continues with the most significant bit
	SwitchRight	Shift bit in tag to right
Recipe:	LoadRecipeEntry	Load recipe entry
	LoadLastRecipeEntry	Load the last recipe entry
	LoadSelectedRecipeEntry	Load currently selected recipe entry
	OnRecipeLoad	Checks whether an entry was loaded with a new recipe
	SaveRecipeEntry	Save recipe entry
	SaveActualRecipeEntry	Save currently selected recipe entry
Special Function:	Call Special Function	Call of a special function
Time:	OnTime	Is true if the time/date entry matches
	OnTimeVar	Is true if the time/date entry matches on the basis of tags
	OnInterval_sec	Checks seconds interval (x seconds)
	OnInterval_min	Checks minute interval (x minutes)
	OnInterval_minVar	Checks minutes interval (number of minutes on the basis of a tag value)
	OnInterval_hourly	Checks x minutes after the hour
	OnInterval_hourlyVar	Checks x minutes after the hour on the basis of a tag value
	OnInterval_daily	Checks day interval (specified time of a day, in which one or several weekdays

		can be specified)
	OnInterval_dailyVar	Checks day interval (specified time of a day on the basis of a tag value)
	OnInterval_weekly	Checks the week interval (specific time of day in a specific weekday)
	OnInterval_weeklyVar	Checks the week interval (specific time of day on a specific weekday on the basis of a tag value)
	OnInterval_monthly	Checks the month interval (specific time of a specific day of the month)
	OnInterval_monthlyVar	Checks the month interval (specific time of a specific day of the month on the basis of the tag values)
	OnInterval_yearly	Checks the year interval (specific time of day on a specific date of the year)
	OnInterval_yearlyVar	Checks the year interval (specific time on a specific day of the year on the basis of the tag values)
Text:	SetTextConst	Assigns a Standard Text to a Char-Array
	Append	Adds the content of a Char-Array to another Char-Array
	Assign	Assigns the content of one Char-Array to another Char-Array
	Compare	Compares the content of two Char-Arrays
	CompareCaseSens	Compares the content of two Char-Arrays
Password:	ChangePWOther	Changes the password of a user
	ChangePWOwn	Changes the password of the currently logged in user
	LoginAtLevel	Log in a user level
	NewUser	Create a new user
	UserLogin	Log in a user

Operands

All operands are available in Loop Scripts and Event Scripts.

Operand	**Description**
=	Compare: equal
<>	Compare: not equal
<	Compare: less than
>	Compare: greater than
>=	Compare: greater than/equal to
<=	Compare: less than/equal to
+	Addition
-	Subtraction
*	Multiplication
/	Division
()	Parentheses
AND	Logic AND sequence
OR	Logic OR sequence
NOT()	Logic NOT
TRUE	Logic constant TRUE
FALSE	Logic constant FALSE
Round()	Round the value
Trunc()	Cut off decimals

Note:
The MMI calculates mathematic expressions internally with decimal places. The result is truncated to an integer value at the end of the calculation. Only this last truncated value must therefore be considered as an approximation.

15.3.2 Standard

//

Adds a comment line. Comments in the script are shown in green. A comment line has no effect on the behaviour of the MMI and is used to describe the script or deactivate script lines.

Error Refresh

Function available in loop scripts	: Yes
Function available in event scripts	: Yes

If error tags are used in scripts, the "Error Refresh" command must be called beforehand so that the values can be refreshed by the PLC.

Attention:
The instruction error Refresh should not be called cyclically. The communication was stressed otherwise too much.

GetActMaskNo

Return parameter	:
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Determines the number of the currently visible Mask.

if, else, endif

Function available in loop scripts	: Yes
Function available in event scripts	: Yes

These commands can be used in two different constellations, only if and endif or if, else and endif.

Use: if, endif

The 'if' command describes the conditions required for the execution of particular instructions. The condition must always be defined in parentheses. An "if" command should always have an "endif" command to end the condition concerned. If the condition is true, the commands between the "if" and "endif" command are processed. If the condition is not true, however, the program jumps directly to the command after the "endif" command.

The result of the conditions must always be a Boolean value.

Use: if, else, endif

If required the "else" command can be used between the "if" and "endif" commands. If the condition is true, the commands between the "if" and "else" command are processed. If, however, the condition is not true (i.e. not fulfilled), the commands between "else" and "endif" are processed.

Different operands are available within a condition. Several "if", "else", "endif" commands can be nested.

Example 1 (only if and endif):

```
if (tag = 10)
   tag = 100;
endif
```

Example 2 (if, else and endif:

```
if (tag = 10)
   tag = 100;
else
   tag = 0;
endif
```

Example 3 (nesting):

```
if ((tagA = 10) OR (tagB > 0))
   tagA = 100;
```

```
    if (tagB > 20)
        Inc(tagC);
    else
        if (tagD < 0)
            Dec(tagC);
        endif
    endif
else
    tagD = 0;
endif
```

MaskChange

Parameter entered	: Mask name
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function causes the MMI to switch to the selected Mask.

MathExpr

Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function initiates an arithmetic calculation (e.g. addition, subtraction, multiplication and division). For this an editor opens containing all the available functions.

OnChangeTag

Parameter entered	: Name of a tag
Return parameter	: True, if tag value was changed.
Function available in loop scripts	: Yes
Function available in event scripts	: No

Checks, whether a tag value was changed. Whenever the tag was changed the function is 'true'.

Note:
This function is fulfilled only **ONCE** with every tag change and should therefore be used at one point of a script.

OnPresetOK

Return parameter	: True after successfully synchronisation of all tags
Function available in loop scripts	: Yes
Function available in event scripts	: No

Checks whether data synchronisation was successfully completed when a MMI is restarted. This function get the state of the bit 1 of the 1st data word of the status data block

Note:
This function is executed **ONCE** after the MMI program is restarted.

Script

Parameter entered	: Name of a script
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Call of a different script. Other Event Scripts can be called inside an event script. Only Functions of Loop Script can be called inside Loop Scripts.

15.3.3 Tag

Dec

Parameter entered	: Name of a tag
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Reduce tag value by 1

Inc

Parameter entered	: Name of a tag
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Increase tag value by 1

InvertBit

Parameter entered	: Name of a tag
Parameter entered	: Bit number [0..x]
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Invert the xth bit of a tag.

ReReadTag

Parameter entered	: Name of a tag
Function available in loop scripts	: No
Function available in event scripts	: Yes

This setting causes the MMI to explicitly read this tag from the communication interface (depending on the connected communication: from the PLC, Bus or ...).

see also:

Data_Synchronization
SyncWriteTag

ResetBit

Parameter entered	: Name of a tag
Parameter entered	: Bit number [0..x]
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Reset the x-th bit of the tag (set to 0).

SetBit

Parameter entered	: Name of a tag
Parameter entered	: Bit number [0..x]
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Set the xth bit of the tag (set to 1).

SetVar

Parameter entered	: Name of a tag: Destination tag
Parameter entered	: Name of a tag: Source tag
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Assigns the destination tag with the value of the source tag.

SetVarConst

Parameter entered	: Name of a tag
Parameter entered	: Constant
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Set the tag with a constant value.

SHL

Parameter entered	: Name of a tag
Parameter entered	: Number of bits to be shifted
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Shift bit sequence of a tag by x bits to the left. Bits moved are always 0.

Example:

```
SHL(tag, 3)
        1001 1101   tag value before shift
        1110 1000   tag value after shift
```

SHR

Parameter entered	: Name of a tag
Parameter entered	: Number of bits to be shifted
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Shift bit sequence of a tag by x bits to the right. Shifted bits are always 0.

Example:

```
SHR(tag, 3)
        1001 1101   tag value before shift
        0001 0011   tag value after shift
```

SwitchLeft endless

Parameter entered	: Name of a tag
Parameter entered	: max. Number of steps
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Shifts a bit one step to the left. Only one bit can be set. If several bits are set, the least significant bit set will be shifted to the left and all other bits set to 0. If the bit is shifted past the number of steps, the bit will appear again at the least significant bit.

Note:
Only one **single** bit can be set to 1.

Example:

```
SwitchLeft [endless](tag, 4)
0000 0001   tag value before shift
0000 0010   tag value after 1. shift
0000 0100   tag value after 2. shift
0000 1000   tag value after 3. shift
0000 0001   tag value after 4. shift

SwitchLeft [endless](tag, 8)
0000 1000   tag value before shift
0001 0000   tag value after 1. shift
0010 0000   tag value after 2. shift
0100 0000   tag value after 3. shift
1000 0000   tag value after 4. shift
0000 0001   tag value after 5. shift
```

SwitchLeft

Parameter entered	: Name of a tag
Parameter entered	: Number of steps
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Shifts a bit one step to the left. Only one bit can be set. If several bits are set, the least significant bit set will be shifted to the left and all other bits set to 0. If the bit is shifted past the number of steps, the result is 0.

Note:
Only one **single** bit can be set to 1.

Example:

SwitchLeft (tag, 4)

0000 **0001**	tag value before shift
0000 **0010**	tag value after 1. shift
0000 **0100**	tag value after 2. shift
0000 **1000**	tag value after 3. shift
0000 **0000**	tag value after 4. shift

SwitchLeft (tag, 8)

0000 1000	tag value before shift
0001 0000	tag value after 1. shift
0010 0000	tag value after 2. shift
0100 0000	tag value after 3. shift
1000 0000	tag value after 4. shift
0000 0000	tag value after 5. shift

SwitchRight endless

Parameter entered	: Name of a tag
Parameter entered	: Number of steps
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Shifts a bit one step to the right. Only one bit can be set. If several bits are set, the least significant bit set will be shifted to the right and all other bits set to 0. If the bit is shifted past the least significant bit, the bit will appear again at the bit position depending on the number of steps.

Note:
Only one **single** bit can be set to 1.

Example:

SwitchRight [endless](tag, 4)

0000 **1000**	tag value before shift
0000 **0100**	tag value after 1. shift
0000 **0010**	tag value after 2. shift
0000 **0001**	tag value after 3. shift
0000 **1000**	tag value after 4. shift

SwitchRight [endless](tag, 8)

0000 1000	tag value before shift
0000 0100	tag value after 1. shift
0000 0010	tag value after 2. shift
0000 0001	tag value after 3. shift
1000 0000	tag value after 4. shift

SwitchRight

Parameter entered	: Name of a tag
Parameter entered	: Number of steps
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Shifts a bit one step to the right. Only one bit can be set. If several bits are set, the least significant bit set will be shifted to the right and all other bits set to 0. If the bit is shifted past the least significant bit, the result is 0.

Note:
Only one **single** bit can be set to 1.

Example:

SwitchRight (tag, 4)

0000 **1000**	tag value before shift

0000 **0100**	tag value after 1. shift
0000 **0010**	tag value after 2. shift
0000 **0001**	tag value after 3. shift
0000 **0000**	tag value after 4. shift

SwitchRight (tag, 8)

0010 0000	tag value before shift
0001 0000	tag value after 1. shift
0000 1000	tag value after 2. shift
0000 0100	tag value after 3. shift
0000 0010	tag value after 4. shift

SyncWriteTag

Parameter entered	: Tag of a tag
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function causes the MMI to write this tag synchronously to the communication interface (depending on the connected communication of the PLC, bus, etc.). This script is aborted and is not resumed until the tag has been written.

see also:

Data_Synchronization
ReReadTag

15.3.4 Recipe

LoadRecipeEntry

Parameter entered	: Name of recipe
Parameter entered	: Recipe Entry Number
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function loads and refreshes the values of the Recipe Entry Number from the recipe file, the tag values (see Recipe Tags), the current Recipe Entry Name and the current recipe entry number are set and transferred to the PLC if required. **No values are saved** in the previously loaded recipe. This function is only available for a Recipe Object in Enhanced Mode.

see also:

LoadRecipeEntryVar
LoadLastRecipeEntry
LoadSelectedRecipeEntry

LoadRecipeEntryVar

Parameter entered	: Name of recipe
Parameter entered	: Name of a tag: Recipe Entry Number
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function loads and refreshes the values of the Recipe Entry Number from the recipe file, the tag values (see Recipe Tags), the current Recipe Entry Name and the current recipe entry number are set and transferred to the PLC if required. **No values are saved** in the previously loaded recipe. This function is only available for a Recipe Object in Enhanced Mode.

see also:

LoadRecipeEntry
LoadLastRecipeEntry
LoadSelectedRecipeEntry

LoadLastRecipeEntry

Parameter entered	: Name of recipe
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

This function loads and refreshes the values of the last loaded recipe entry from the recipe file, i.e. the tag values (see Recipe Tags), the current Recipe Entry Name and the current Recipe Entry Number are set and transferred to the PLC if required. **No values are saved** in the previously loaded recipe. This function is only available for a recipe object in Enhanced Mode.
After the MMI unit has started, this function loads the recipe entry that was last loaded. For this purpose a loop script is defined which is only called if the function OnPresetOK reports a true status.

see also:

LoadRecipeEntry
LoadRecipeEntryVar
LoadSelectedRecipeEntry

LoadSelectedRecipeEntry

Parameter entered	: Name of recipe (the object must be loaded in the same Mask)
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function loads and refreshes the values of the currently selected recipe entry from the recipe file, i.e. the tag values (see Recipe Tags) the current Recipe Entry Name and the current Recipe Entry Number are set and transferred to the PLC if required.

see also:

LoadRecipeEntry
LoadRecipeEntryVar
LoadLastRecipeEntry

OnRecipeLoad

Parameter entered	: Name of recipe
Return parameter	: True if a recipe entry was loaded.
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function is 'true' if a new recipe entry was loaded.

Note:
This function is fulfilled **ONCE** every time the recipe entry is changed.

SaveRecipeEntry

Parameter entered	: Name of recipe
Parameter entered	: Recipe Entry Number
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function saves the current tag values under the Recipe Entry Number in the recipe file.

Note:
This function will only be executed if this recipe entry is not locked by Write Protection.

SaveActualRecipeEntry

Parameter entered	: Name of recipe
Function available in loop scripts	: No
Function available in event scripts	: Yes

This function saves the current tag values under the currently loaded recipe entry number in the recipe file.

Note:
This function will only be executed if the loaded recipe entry is not locked by Write Protection.

15.3.5 Special Functions

Call Special Function

Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Call of different Special Functions. The 'Insert Function' dialog lists all supported functions.

15.3.6 Time

OnTime

Parameter entered	: Time
Parameter entered	: Date
Return parameter	: True if time / date matches
Function available in loop scripts	: Yes
Function available in event scripts	: No

Checks whether the internal time / date of the MMI matches the time / data to be checked.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnTimeVar

Parameter entered	: Name of a tag: Hour
Parameter entered	: Name of a tag: Minute
Parameter entered	: Name of a tag: Second
Parameter entered	: Name of a tag: Day
Parameter entered	: Name of a tag: Month
Parameter entered	: Name of a tag: Year
Return parameter	: True if time / date match
Function available in loop scripts	: Yes
Function available in event scripts	: No

Checks whether the internal time / date of the MMI matches the defined time / data in the tag.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_sec

Parameter entered	: Time interval in number of seconds
Return parameter	: True, if time interval elapsed (minimum value 5)
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed every n seconds.
Script command:

```
if ( OnInterval_sec( 20 ) )
    Inc( xy )
endif
```

The above example shows how the tag 'xy' is incremented by 1 every 20 seconds. If the unit was started at 13:23:07, for example, the command sequence will be processed for the first time at 13:23:27 and then repeated every 20 seconds.

Note:
The startup time of the MMI is used as the basis for calculating the time interval.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_min

Parameter entered	: Time interval in number of minutes
Return parameter	: True, if time interval elapsed
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed every n minutes.

Note:
The startup time of the MMI is used as the basis for calculating the time interval.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_minVar

Parameter entered	: Name of a tag: Minutes interval
Return parameter	: True, if time interval elapsed
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed every n minutes. The tag value for the number of minutes is set as the time interval.
If, for example, the tag value is 20, this means that the time interval is 20 minutes. If 15 minutes of the time interval has already expired since the script file was last processed, and the tag value is then changed to 13 minutes, this function is fulfilled immediately, i.e. the script commands are processed and the time interval is restarted.

Note:
The startup time of the MMI is used as the basis for calculating the time interval. A time interval of <= 0 minutes is not permitted. In this case, the function is always true.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_hourly

Parameter entered	: Hourly x minutes after the hour
Return parameter	: True, if time interval elapsed
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed every x minutes after the hour.

Note:
The startup time of the MMI is used as the basis for calculating the time interval.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_hourlyVar

Parameter entered	: Name of a tag: Hourly x minutes after the hour
Return parameter	: True, if time interval elapsed

Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed every x minutes after the hour. The tag value defines the minutes.

Note:
The startup time of the MMI is used as the basis for calculating the time interval. A time interval of <= 0 hours is not permitted. In this case, the function is always true.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_daily

Parameter entered	: Weekday
Parameter entered	: Daily at this Time
Return parameter	: True if the time on defined weekdays matches
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed at the defined weekdays at a specific time.
The weekdays are defined as follows:

Bit 0:	Sunday
Bit 1:	Monday
Bit 2:	Tuesday
Bit 3:	Wednesday
Bit 4:	Thursday
Bit 5:	Friday
Bit 6:	Saturday

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_dailyVar

Parameter entered	: Name of a tag: Weekdays
Parameter entered	: Name of a tag: Hour
Parameter entered	: Name of a tag: Minute
Parameter entered	: Name of a tag: Second
Return parameter	: True if the time on the defined weekdays matches
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed at the defined weekdays at a specific time. The values of the selected tags define the time and weekday required.
The weekdays are defined as follows:

Bit 0:	Sunday
Bit 1:	Monday
Bit 2:	Tuesday
Bit 3:	Wednesday
Bit 4:	Thursday
Bit 5:	Friday
Bit 6:	Saturday

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_weekly

Parameter entered	:	Weekday
Parameter entered	:	Daily at this Time
Return parameter	:	True if the time on the defined weekday matches
Function available in loop scripts	:	Yes
Function available in event scripts	:	No

This function enables a script command sequence to be executed at the defined weekday at a specified time.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_weeklyVar

Parameter entered	:	Name of a tag: Weekday
Parameter entered	:	Name of a tag: Hour
Parameter entered	:	Name of a tag: Minute
Parameter entered	:	Name of a tag: Second
Return parameter	:	True if the time on the defined weekday matches
Function available in loop scripts	:	Yes
Function available in event scripts	:	No

This function enables a script command sequence to be executed at the defined weekday at the specified time. The values of the selected tags define the time and weekday required.

The weekdays are defined as follows:

Value = 0:	Sunday
Value = 1:	Monday
Value = 2:	Tuesday
Value = 3:	Wednesday
Value = 4:	Thursday
Value = 5:	Friday
Value = 6:	Saturday

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_monthly

Parameter entered	:	Day of the month
Parameter entered	:	Time
Parameter entered	:	Month
Return parameter	:	True if time matches
Function available in loop scripts	:	Yes
Function available in event scripts	:	No

This function enables a script command sequence to be executed in the selected months at the defined day at the specified time.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_monthlyVar

Parameter entered	:	Name of a tag: Day of the month
Parameter entered	:	Name of a tag: Hour
Parameter entered	:	Name of a tag: Minute
Parameter entered	:	Name of a tag: Second

Parameter entered	: Name of a tag: Months
Return parameter	: True if time matches
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed in the selected months at the defined day at the specified time. The values of the selected tags define the time, day and month required.
The months are defined as follows: Bit 0 ... Bit 11 = January ... December

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_yearly

Parameter entered	: Month
Parameter entered	: Day of the month
Parameter entered	: Time
Return parameter	: True if time matches
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed yearly in the selected month on the selected day at the specified time.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

OnInterval_yearlyVar

Parameter entered	: Name of a tag: Month
Parameter entered	: Name of a tag: Day of the month
Parameter entered	: Name of a tag: Hour
Parameter entered	: Name of a tag: Minute
Parameter entered	: Name of a tag: Second
Return parameter	: True if time matches
Function available in loop scripts	: Yes
Function available in event scripts	: No

This function enables a script command sequence to be executed yearly in the selected month on the specified day at the selected time. The values of the selected tags define the time, day and month required.

Note:
If the date or time of the MMI is changed manually, this function will supply the value True once, if the time event concerned has elapsed.

15.3.7 Text

Append

Parameter entered	: Name of a Char-Array (Target Tag)
Parameter entered	: Name of a Char-Array (Source Tag)
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Adds the content of the source tag to the destination tag.

Note:
If the content of the source tag does not have sufficient space in the destination tag, the remaining characters will be cut off.

Assign

Parameter entered	: Name of a Char-Array (Target Tag)
Parameter entered	: Name of a Char-Array (Source Tag)
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Assigns the content of one Char-Array to another Char-Array

Note:
The remaining characters are truncated if the content of the source tag does not have sufficient space inside the destination tag.

Compare

Parameter entered	: Name of a Char-Array
Parameter entered	: Name of a Char-Array
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Compares the content of two Char-Arrays Upper and lower case are ignored.

CompareCaseSens

Parameter entered	: Name of a Char-Array
Parameter entered	: Name of a Char-Array
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Compares the content of two Char-Arrays. Distinguishes between upper and lower case.

SetTextConst

Parameter entered	: Name of a Char-Array
Parameter entered	: Standard Text ID
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Assigns a Standard Text to a Char-Array. The Char-Array and the Project text ID are specified as parameters. This makes it possible to assign language-dependent texts to a variable.

15.3.8 Password

ChangePWOther

Parameter entered	User Name
Parameter entered	User Password
Parameter entered	: New Password
Parameter entered	: Confirmation of the new password
Function available in loop scripts	: No
Function available in event scripts	: Yes

Changes the password of a user. This special function is only for users of levels with fewer access rights than the currently selected user level. In the currently selected user level, set the create, delete and change levels of users option.

ChangePWOwn

Parameter entered	: New Password
Parameter entered	: Password confirmation
Function available in loop scripts	: No
Function available in event scripts	: Yes

Changes your own password.

Note:
To execute this function, a user must be logged in.

LoginAtLevel

Parameter entered	: Level
Parameter entered	: Password of the level
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Log in with the user level and password.
After this function is called successfully, the language is loaded that was activated the last time the function was called with this level. Language 0 is loaded if the function was not yet called with this level.
See also Language Selection

NewUser

Parameter entered	: Name of the new user
Parameter entered	: Level of the new user
Parameter entered	Password of the user
Parameter entered	Password confirmation
Function available in loop scripts	: No
Function available in event scripts	: Yes

Defining a new user. Only users with fewer access rights than the currently activated user can be added. The create, delete and change levels of users option must be set in the currently activated user level. If the max. number of users is already used, no additional user can be defined.

UserLogin

Parameter entered	: User name
Parameter entered	: Password of the user
Function available in loop scripts	: Yes
Function available in event scripts	: Yes

Logging in with a user and the corresponding password.
After this function is called successfully, the language is loaded that the activated user last used. Language 0 is loaded if the user was not yet logged in.
See also Language Selection

16 EIB 3.Release

16.1 Conversion to 3.Release

16.1.1 Conversion to 3.Release

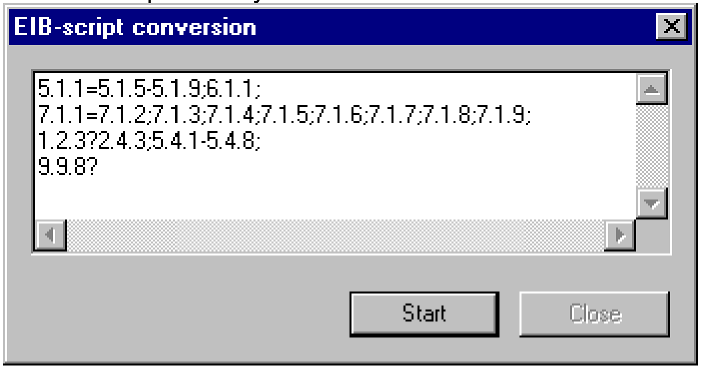
Caution: Before starting the conversion, it is advisable to make a backup copy of the existing project! The conversion is upwardly compatible, i.e. You cannot reverse the process and convert back to a previous EIB version (Release 1 or 2).

The project is converted if the PLC for the project is changed from an older EIB Version (Release 1 or 2) to EIB Release 3. This conversion makes the following changes:

EIB Script

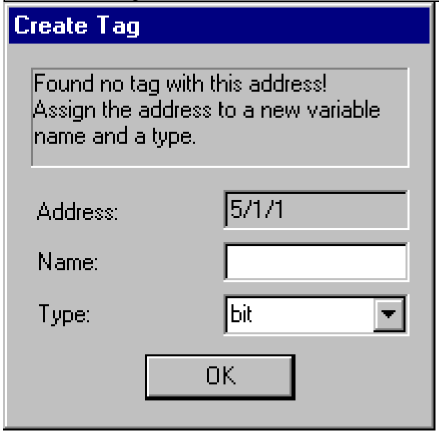
All definitions in the EIB script are converted except for the '!' function (inversion). The EIB script is now no longer available since the Central Commands in the Central Command Manager can be defined.

The EIB script is analyzed and converted.


EIB-script conversion

```
5.1.1=5.1.5-5.1.9;6.1.1;
7.1.1=7.1.2;7.1.3;7.1.4;7.1.5;7.1.6;7.1.7;7.1.8;7.1.9;
1.2.3?2.4.3;5.4.1-5.4.8;
9.9.8?
```

Note: It is essential that all Central Commands, have the addresses of available tags. Otherwise the defined group commands cannot be converted correctly. If this is not the case, you will be asked to define a tag for this address.


Create Tag

Found no tag with this address!
Assign the address to a new variable name and a type.

Address: 5/1/1

Name:

Type: bit

Arrays

All addressed arrays are converted to structures as the addressing of arrays is now no longer permissible. This excludes Char-Array type tags. Within the structure each element is addressed separately.

Address

All addresses of tags in 2-point notation are converted to 3-point notation. 2-point notation is now no longer permissible.

DWord

Addressed DWord type tags that represent a 16-bit float variable are converted to Float type tags. The address of the Float tag is set to the new type EIS 5 (16-bit).

Note: When addressing float tags it is now possible to select between **EIS 5 (16-bit)** or **EIS 9 (32-bit)** float tags.

See Address, Central Commands, Central Command Manager

16.2 Tag Settings

16.2.1 Address

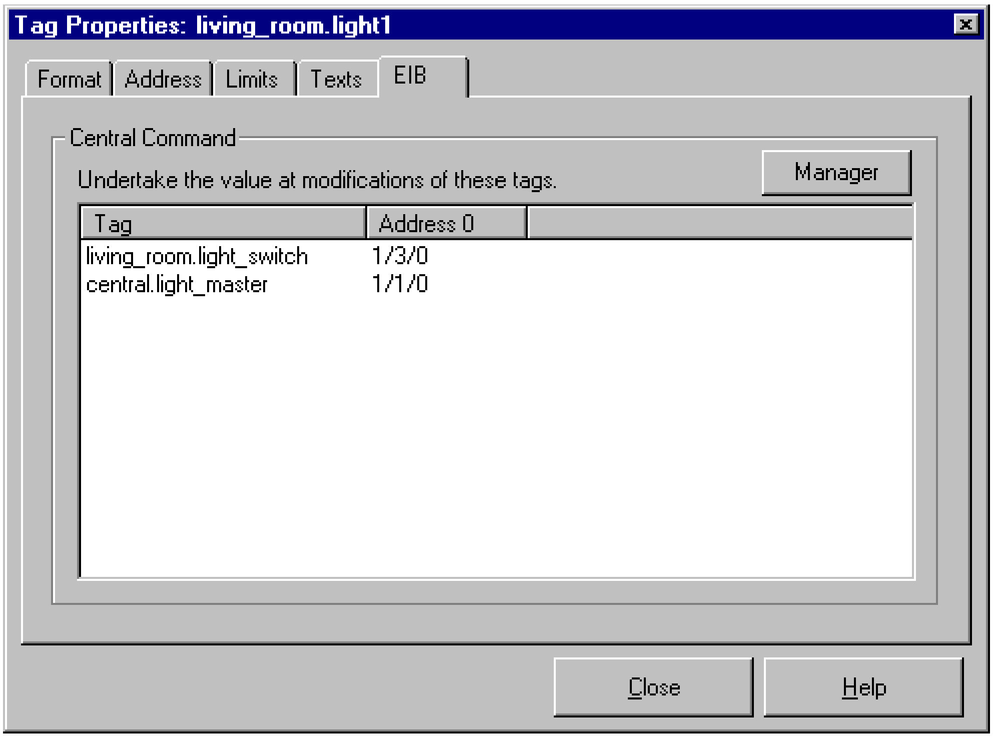
When addressing tags to an EIB 3 release, it must be remembered that arrays must not be addressed. Arrays must only be used for internal purposes.
If structures are directly addressed, they are processed as objects.

Note: The entire object, including all elements now takes up the same address! **EIS objects** consisting of more than one basic element (bit, nibble, byte, word, DWord, Float) can thus be imaged in this way .

Caution: Objects are always transferred in their entirety. In other words, the entire structure is written to the bus every time an element is changed, for example, when an entry is made. The user must therefore ensure that all the elements of an object have permissible values! After the panel is started up, an object only has permissible values once it has been initialized or once all the elements of the object have been assigned a value.

See Conversion to 3.Release

16.2.2 Central Commands



Central Command

Undertake the value at modifications of these tags.

Tag	Address 0
living_room.light_switch	1/3/0
central.light_master	1/1/0

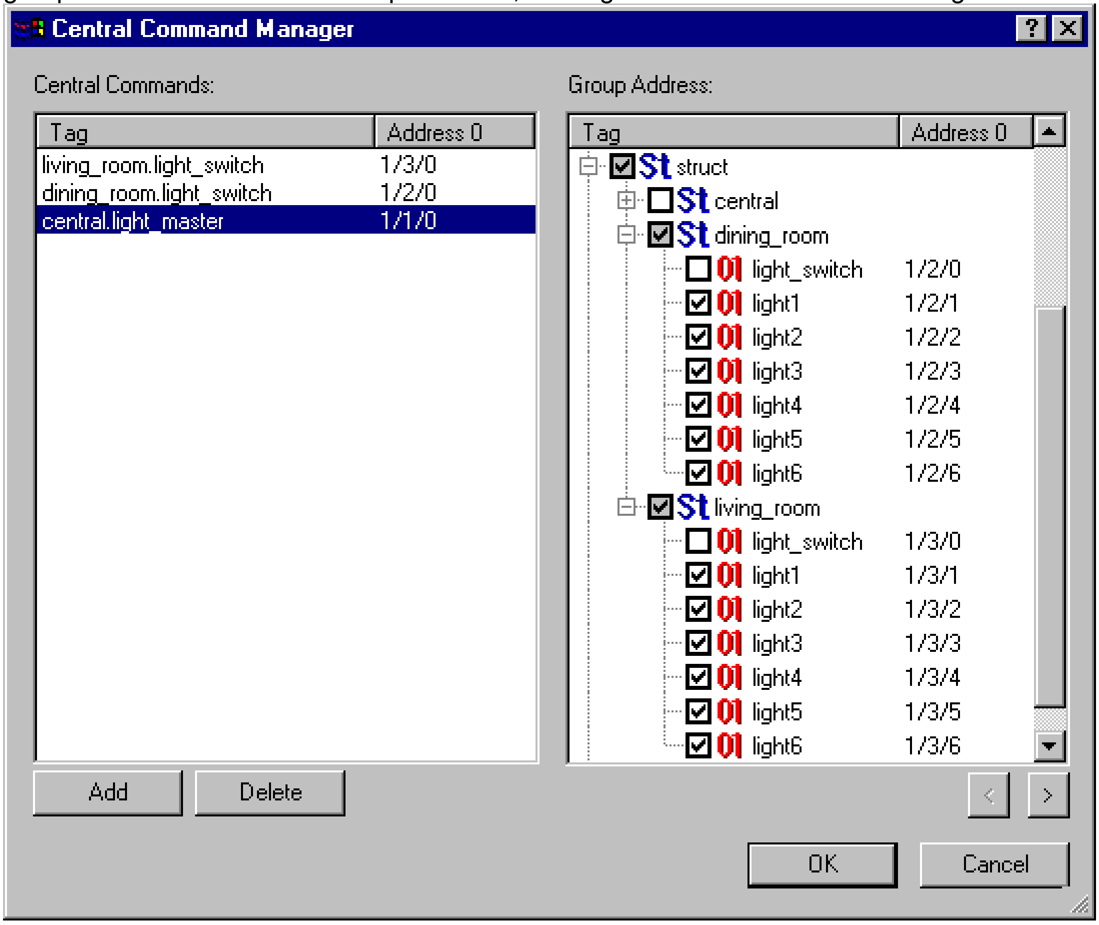
Manager
Calling of the Central Command Manager where the group commands are defined.
Central Command
This list shows all the group commands available as well as their addresses. The value of the current tag is set to the value of the group command when one of these group commands is received from the list. The group commands are defined in the Central Command Manager.

See Conversion to 3.Release, Central Command Manager

16.3 Central Command Manager

16.3.1 Central Command Manager

Group commands enable interdependencies to be implemented easily between a sensor and several actuators. An example of this would be a lighting control system using group commands. This will allow all the lamps in a room to be switched on via one light switch. The group command would therefore be the light switch and the lamps would be the elements of the group command. Nested group commands can also be implemented, although this is restricted to 8 nesting levels.



Central Commands:

Tag	Address 0
living_room.light_switch	1/3/0
dining_room.light_switch	1/2/0
central.light_master	1/1/0

Group Address:

Tag	Address 0
☑ St struct	
☐ St central	
☑ St dining_room	
☐ 01 light_switch	1/2/0
☑ 01 light1	1/2/1
☑ 01 light2	1/2/2
☑ 01 light3	1/2/3
☑ 01 light4	1/2/4
☑ 01 light5	1/2/5
☑ 01 light6	1/2/6
☑ St living_room	
☐ 01 light_switch	1/3/0
☑ 01 light1	1/3/1
☑ 01 light2	1/3/2
☑ 01 light3	1/3/3
☑ 01 light4	1/3/4
☑ 01 light5	1/3/5
☑ 01 light6	1/3/6

The
Central Commands are shown in two lists. The left-hand list shows all group commands that have been currently defined. The right-hand list shows all the elements belonging to a particular group command. Selecting a group command will also select the corresponding elements.

Add

Adds a new group command to the list.

Delete

Removes the selected group command from the list.

>

Moves to the next element of the currently selected group command.

<

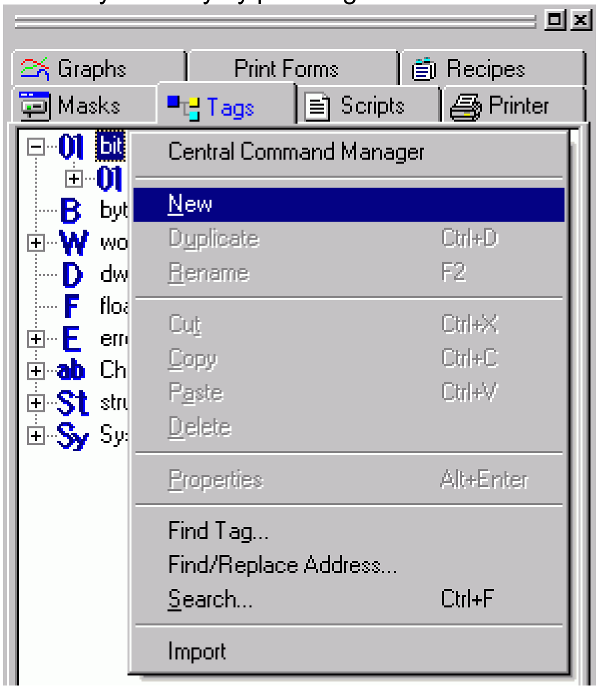
Moves to the previous element of the currently selected group command.

See Conversion to 3.Release, Central Commands

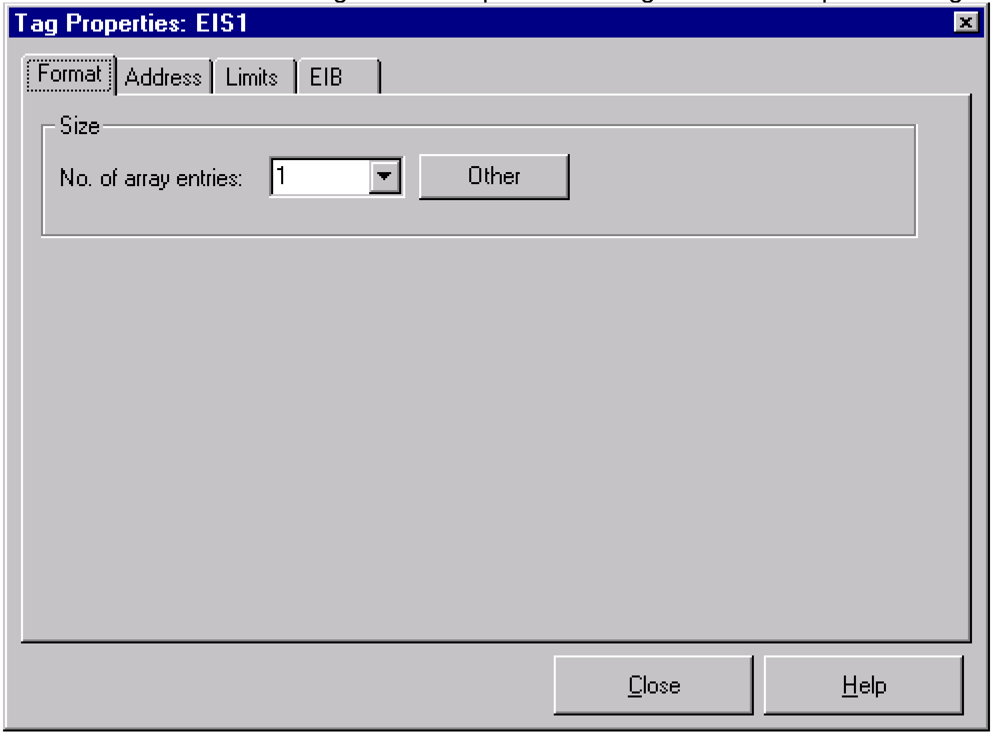
16.4 EIS Formats

16.4.1 EIS 1, Switching

Right-click on Bit in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.

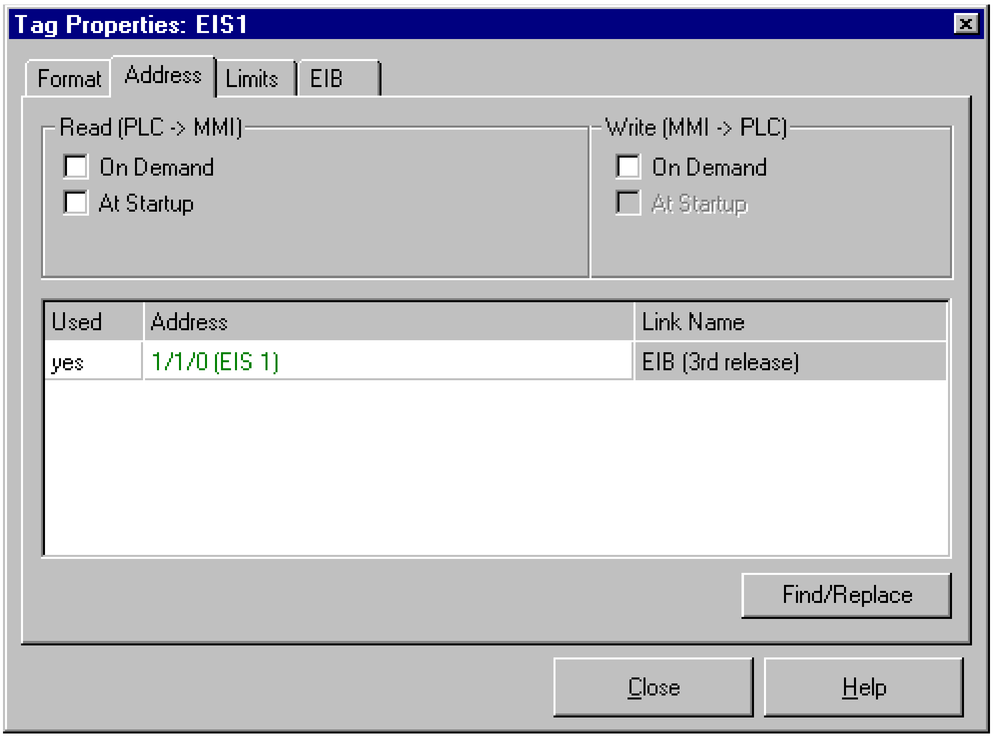


Now double-click the new tag created or press Enter again. This will open the Tag Definition window!



No. of array entries: 1

To create a single addressed tag, leave the setting at Number of Elements in the Format tab on 1. Now move to the Address tab.



Tag Properties: EIS1

Read (PLC -> MMI)

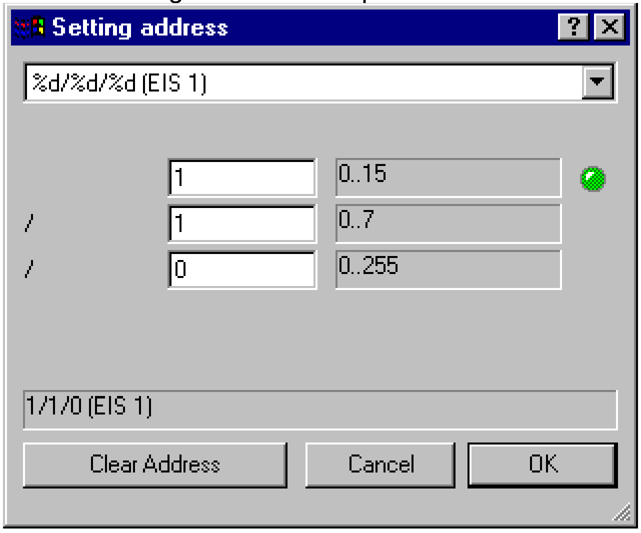
☐ On Demand
☐ At Startup

Write (MMI -> PLC)

☐ On Demand
☐ At Startup

Used	Address	Link Name
yes	1/1/0 (EIS 1)	EIB (3rd release)

Double-clicking Address will open the Set Address window.



Setting address

%d/%d/%d (EIS 1)

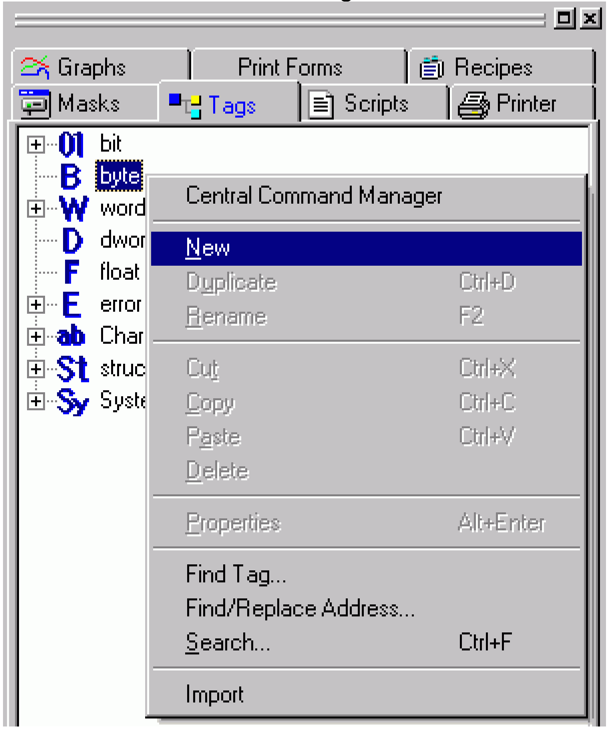
	1	0..15
/	1	0..7
/	0	0..255

1/1/0 (EIS 1)

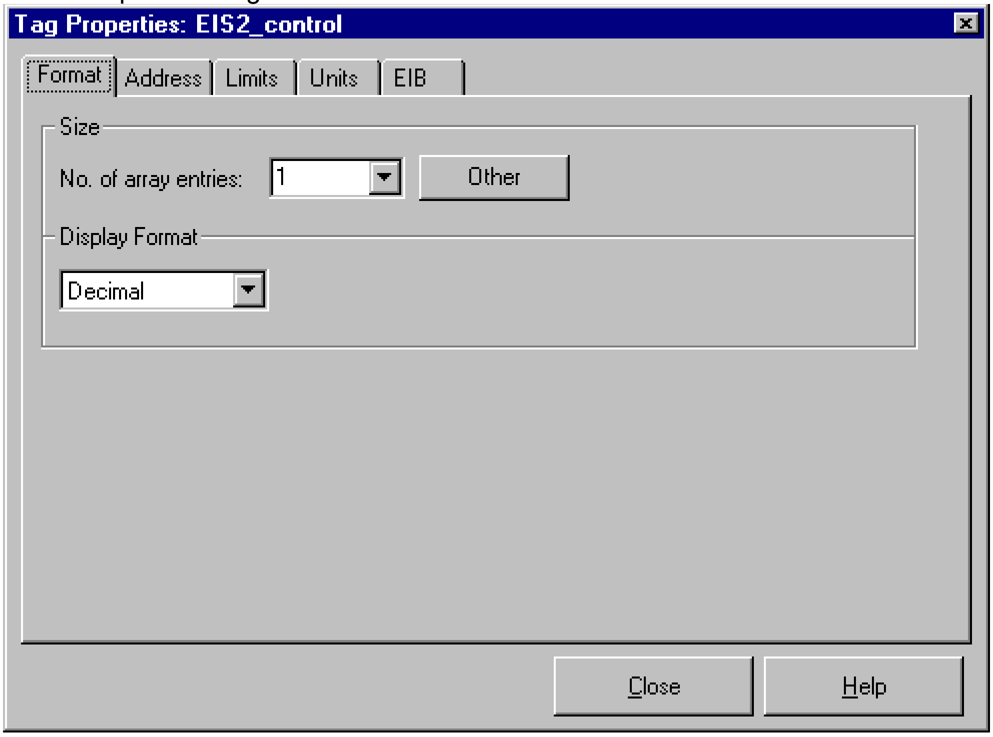
Select the syntax with (EIS 1), enter the required group address in the fields and end with OK!

16.4.2 EIS 2, CONTROL, DIMMING

Right-click on Byte in Project Overview → Tags .
Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



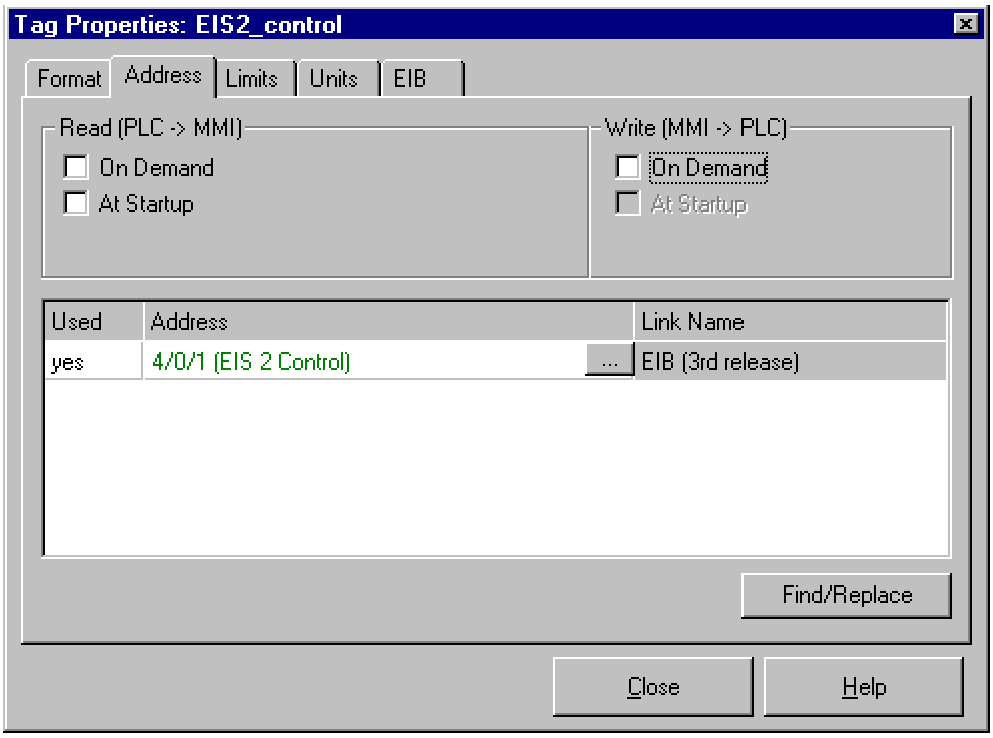
Now double-click the new tag created or press Enter again.
This will open the Tag Definition window!


Tag Properties: EIS2_control

No. of array entries: 1

Decimal

To create a single addressed tag, leave the setting at Number of Elements in the Format tab on 1. Now move to the Address tab.



Tag Properties: EIS2_control

Read (PLC -> MMI)

□ On Demand

□ At Startup

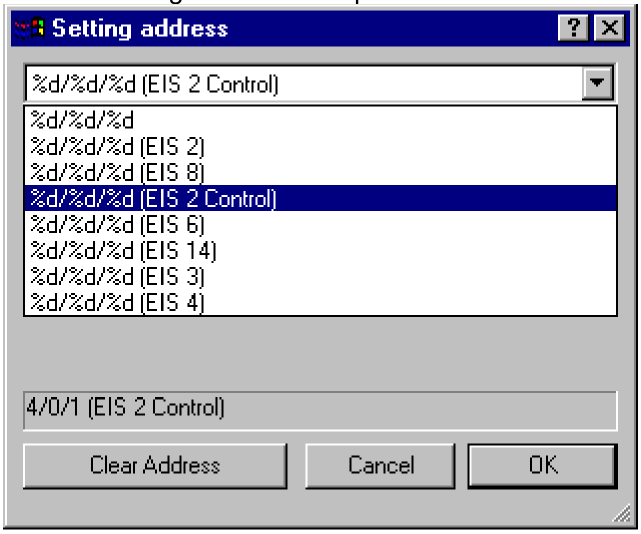
Write (MMI -> PLC)

□ On Demand

□ At Startup

Used	Address	Link Name
yes	4/0/1 (EIS 2 Control) ...	EIB (3rd release)

Double-clicking Address will open the Set Address window.



Setting address

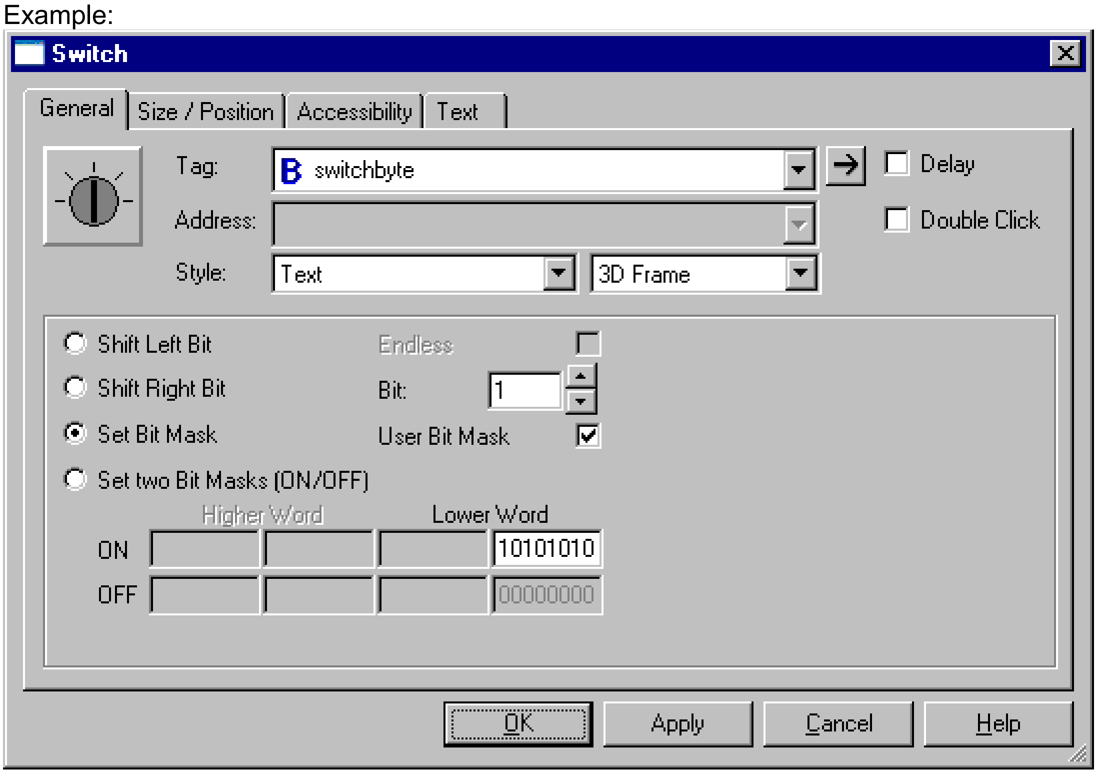
%d/%d/%d (EIS 2 Control)

```
%d/%d/%d
%d/%d/%d (EIS 2)
%d/%d/%d (EIS 8)
%d/%d/%d (EIS 2 Control)
%d/%d/%d (EIS 6)
%d/%d/%d (EIS 14)
%d/%d/%d (EIS 3)
%d/%d/%d (EIS 4)
```

4/0/1 (EIS 2 Control)

Select the syntax with (EIS 2). This type reduces the byte to a nibble. Enter the required group address in the fields and complete your entry by clicking OK!
The dimming is used with the Switch dynamic object in the project.

Example:



Switch

Tag: switchbyte

Address:

Style: Text, 3D Frame

☐ Delay

☐ Double Click

○ Shift Left Bit

○ Shift Right Bit

● Set Bit Mask

○ Set two Bit Masks (ON/OFF)

Endless ☐

Bit: 1

User Bit Mask ☑

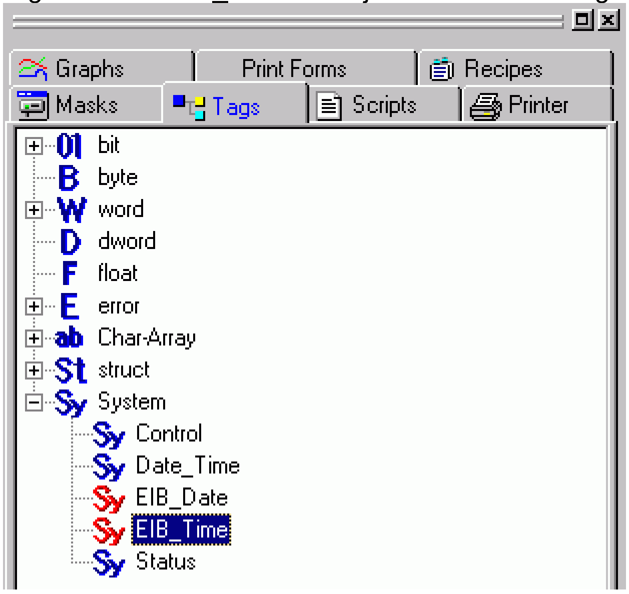
	Higher Word		Lower Word	
ON				10101010
OFF				00000000

'Set Two Bit Masks' causes the preset binary entry 1001 to be transferred as a number 9 to the actuator so that this is brighter. When the switch is released, a 0 is sent, i.e. Stop. A 1 is sent with On to reduce the brightness and then a 0 when released.

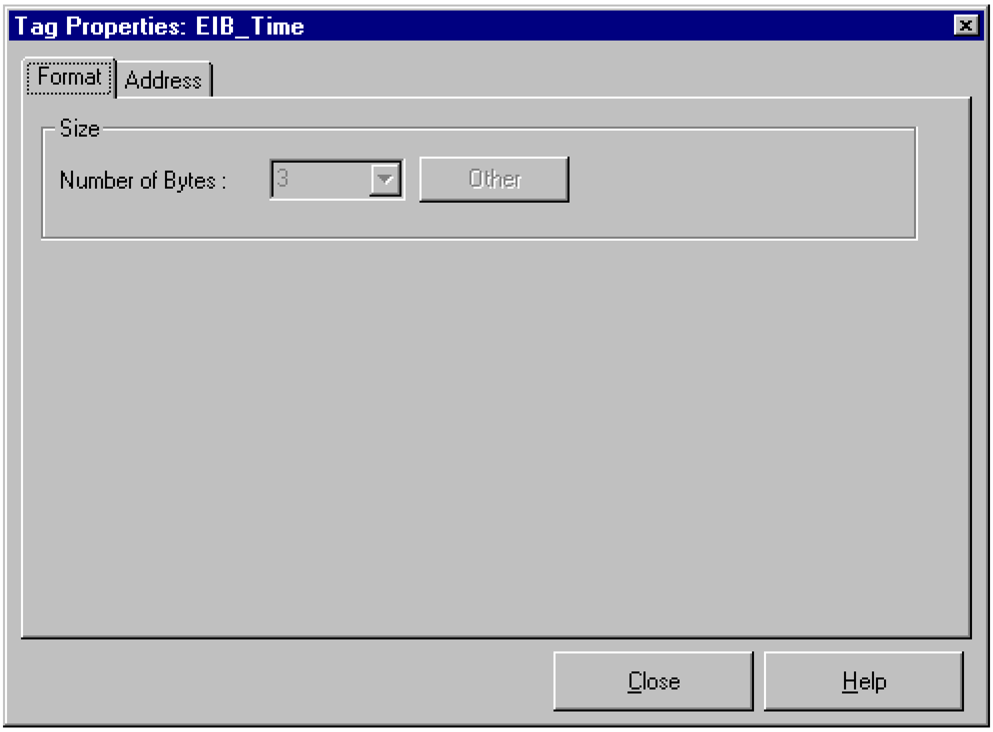
Note:
The EIS 2 type processes a nibble, i.e. only the four least significant bits 0000**1001**.

16.4.3 EIS 3, TIME

Right-click on EIB_Time in Project Overview → Tags.



Double-click EIB_Time to open the Tag Definition window!

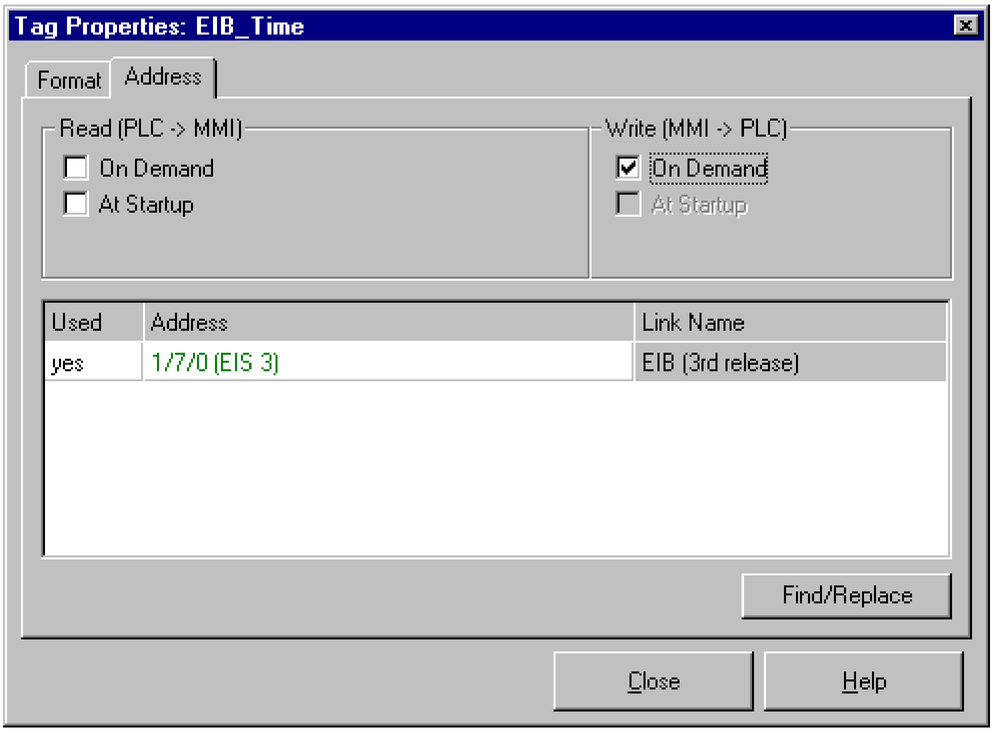


Tag Properties: EIB_Time

Size

Number of Bytes : 3

Now move to the Address tab.



Tag Properties: EIB_Time

Read (PLC -> MMI)

□ On Demand

□ At Startup

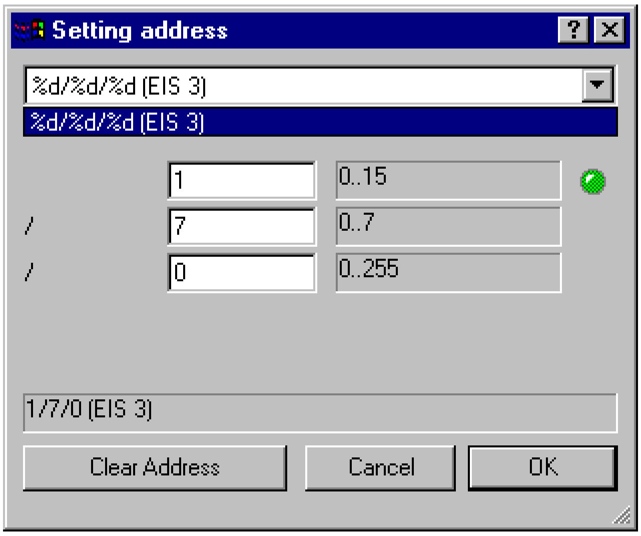
Write (MMI -> PLC)

☑ On Demand

□ At Startup

Used	Address	Link Name
yes	1/7/0 (EIS 3)	EIB (3rd release)

Double-clicking Address will open the Set Address window.Bus initialisation 'At Startup' causes the event-driven reading of date or time data blocks as a slave communication and their transfer to the system time of the panel.



Setting address

%d/%d/%d (EIS 3)

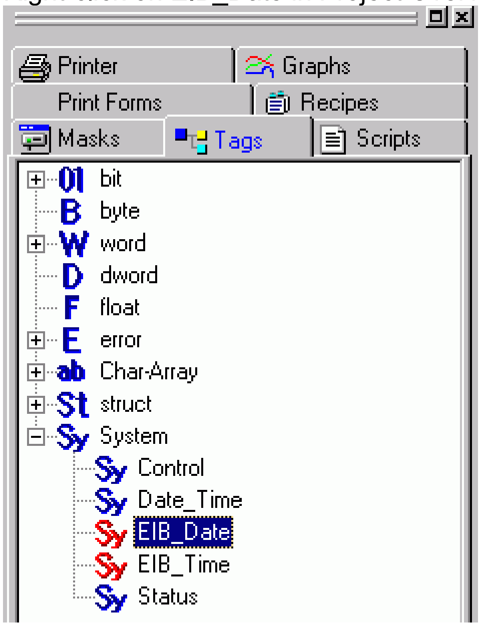
	1	0..15
/	7	0..7
/	0	0..255

1/7/0 (EIS 3)

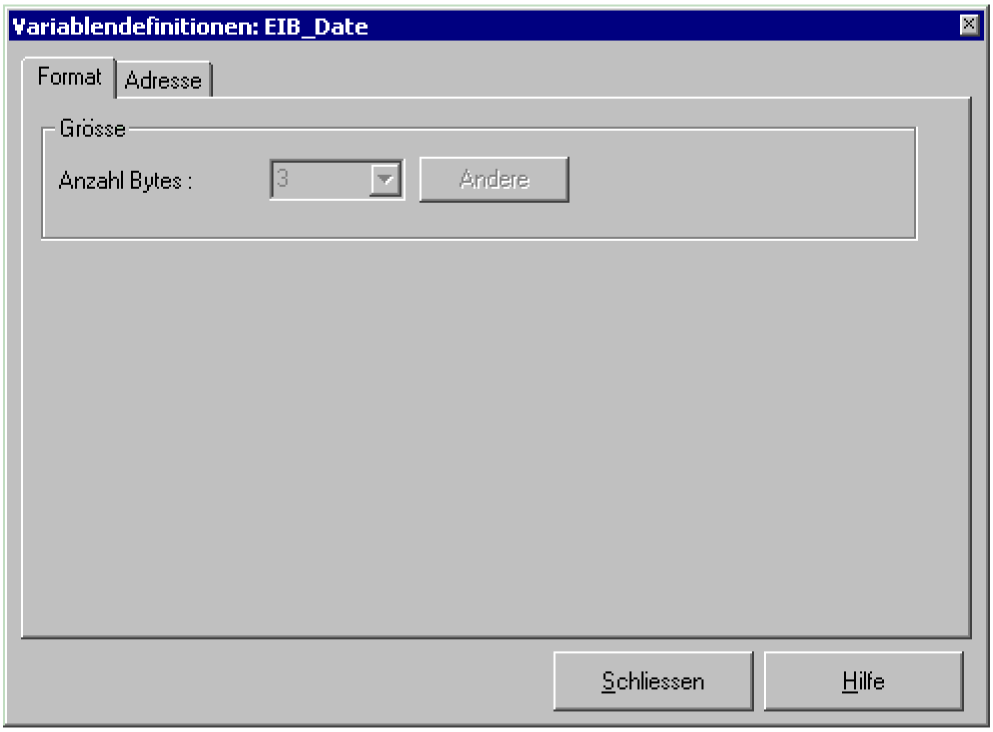
Select the syntax with (EIS 3). Enter the required group address in the fields and complete your entry by clicking OK!

16.4.4 EIS4, DATE

Right-click on EIB_Date in Project Overview → Tags.



Double-click EIB_Date to open the Tag Definition window!

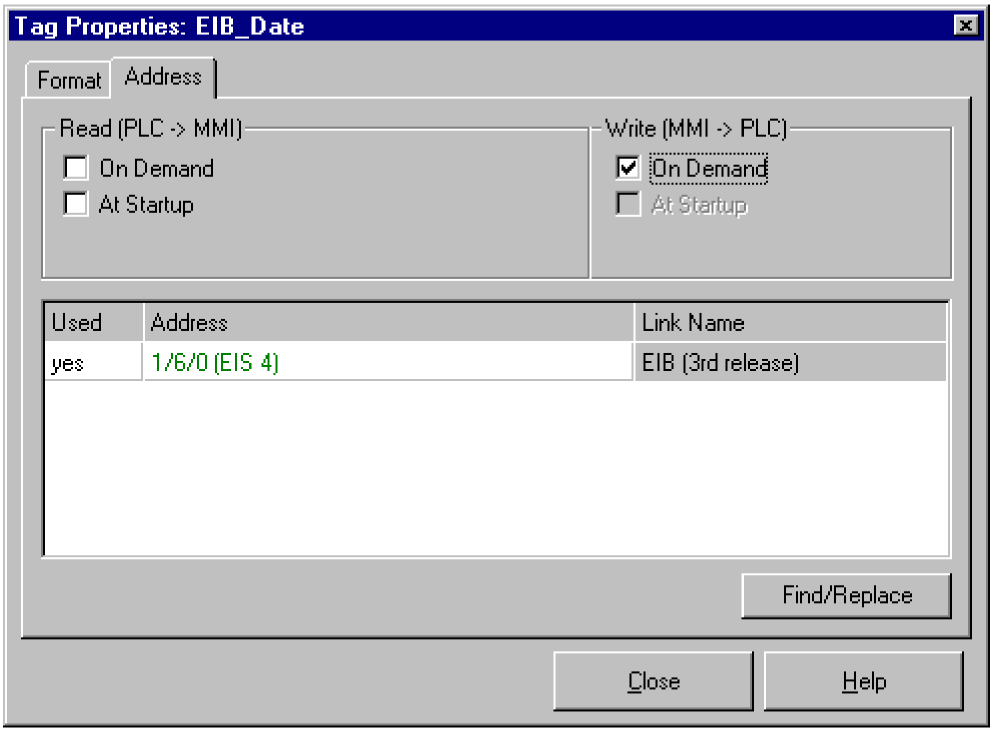


Variablendefinitionen: EIB_Date

Grösse

Anzahl Bytes : 3

Now move to the Address tab.



Tag Properties: EIB_Date

Read (PLC -> MMI)

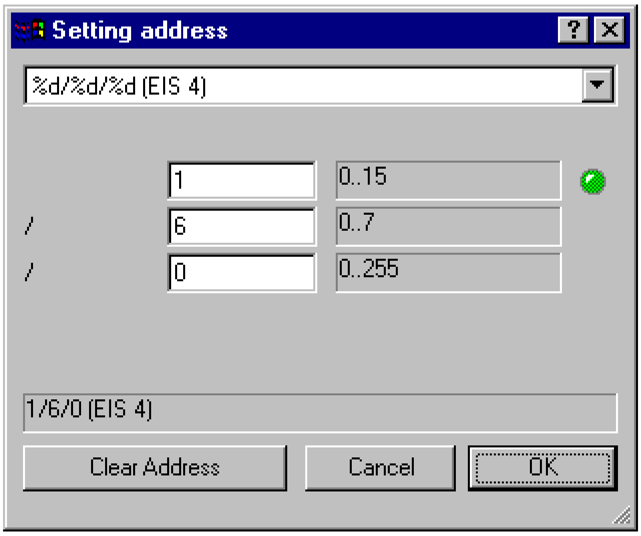
☐ On Demand
☐ At Startup

Write (MMI -> PLC)

☑ On Demand
☐ At Startup

Used	Address	Link Name
yes	1/6/0 (EIS 4)	EIB (3rd release)

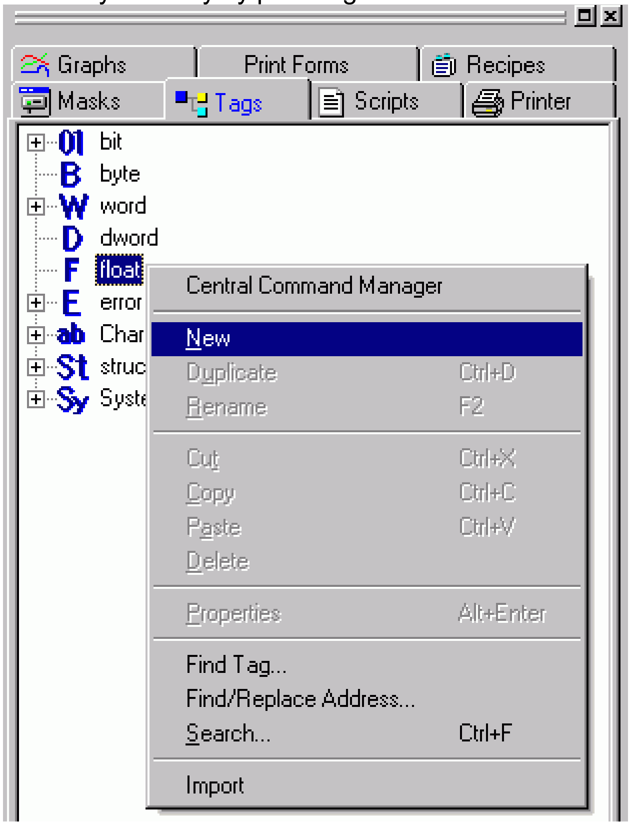
Double-clicking Address will open the Set Address window.
Bus initialisation 'At Startup' causes the event-driven reading of date or time data blocks as a slave communication and their transfer to the system time of the panel.



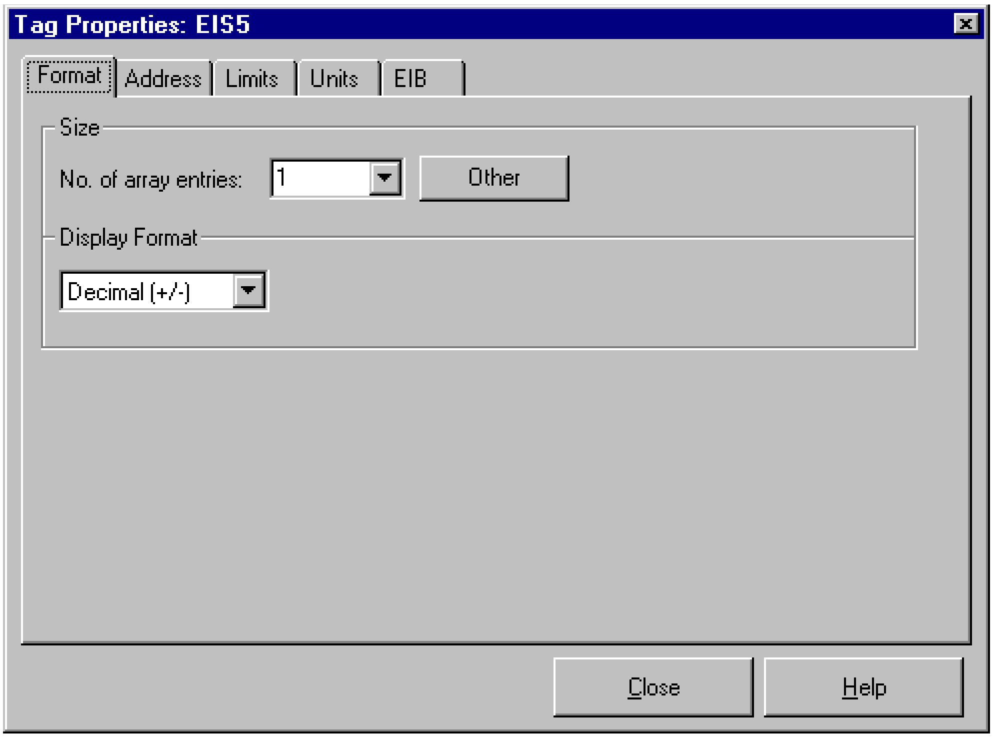
Select the syntax with (EIS 4). Then enter the required group address in the fields and complete your entry by clicking OK!

16.4.5 EIS 5, VALUE

Right-click on Float in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



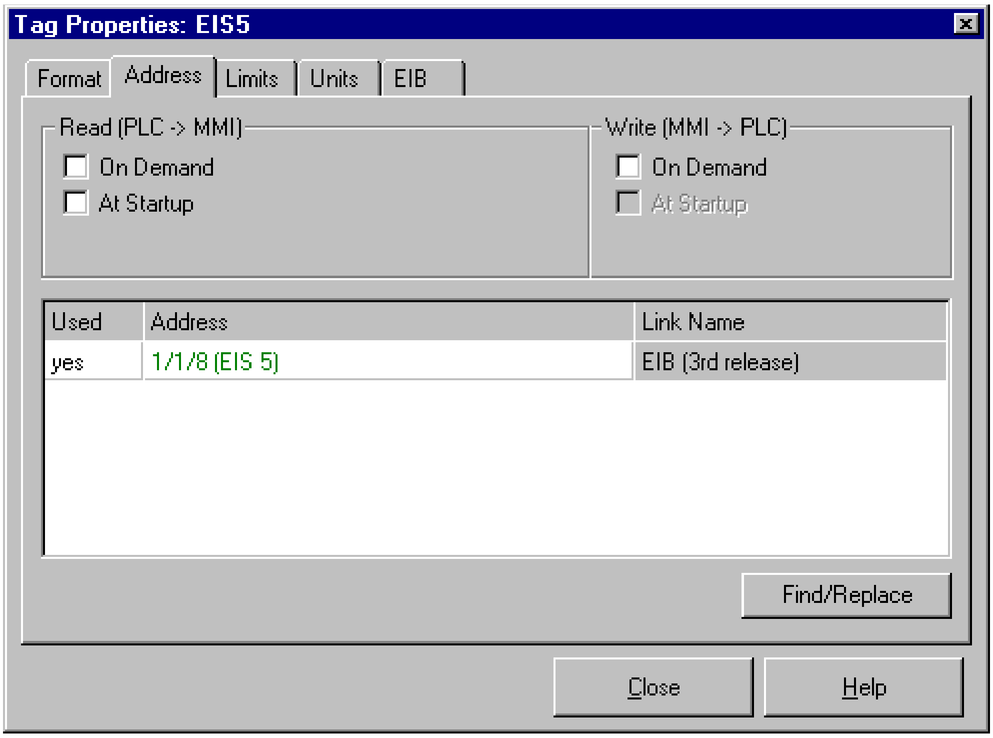
Now double-click the new tag created or press the Enter key again. This will open the Tag Definition window!



No. of array entries: 1

Decimal (+/-)

To create a single addressed tag, leave the setting at Number of Elements in the Format tab on 1. Now move to the Address tab.

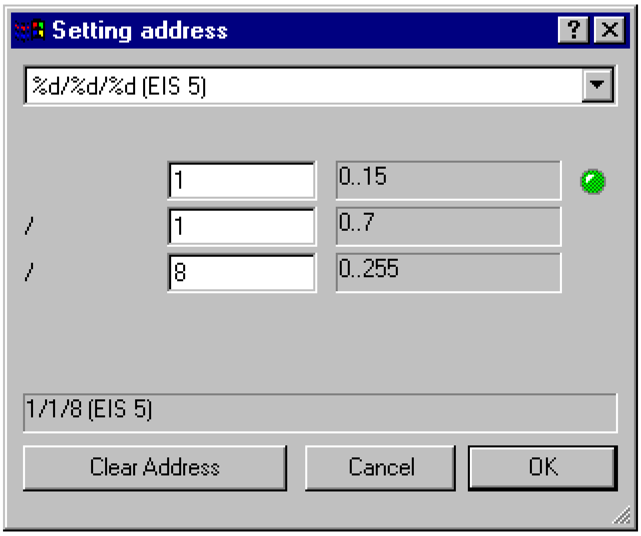


Read (PLC -> MMI)
- □ On Demand
- □ At Startup

Write (MMI -> PLC)
- □ On Demand
- □ At Startup

Used	Address	Link Name
yes	1/1/8 (EIS 5)	EIB (3rd release)

Double-clicking Address will open the Set Address window.



%d/%d/%d (EIS 5)

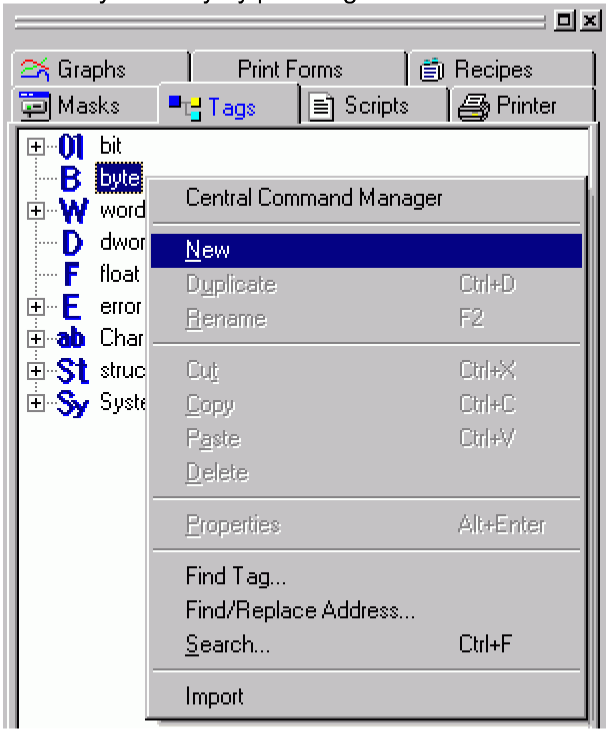
	1	0..15
/	1	0..7
/	8	0..255

1/1/8 (EIS 5)

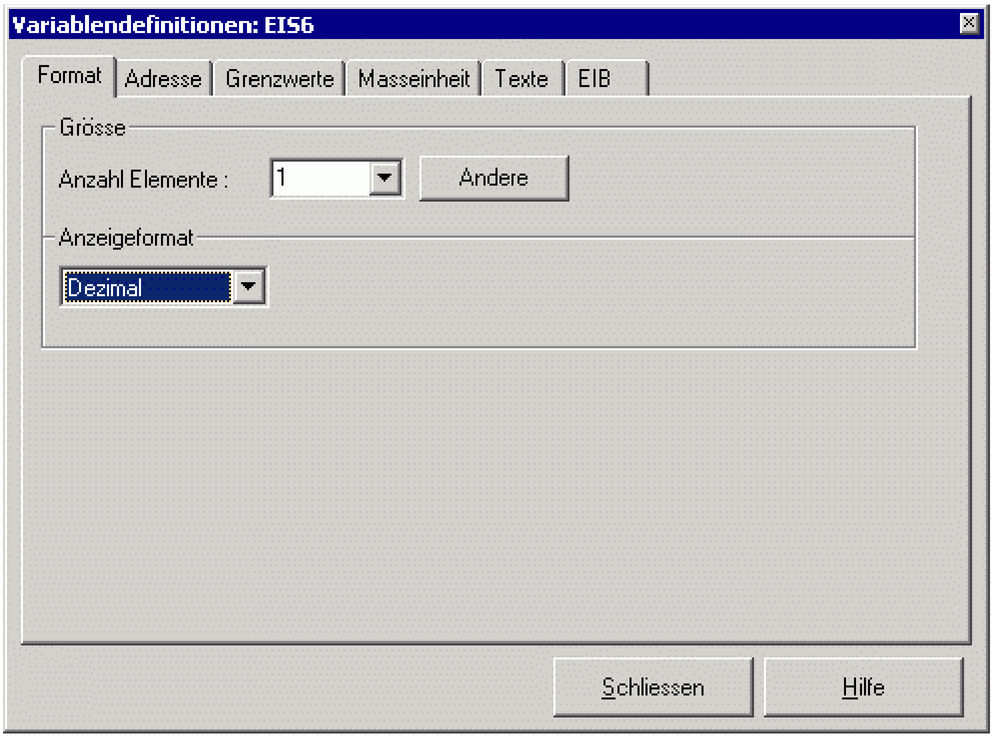
Select the syntax with (EIS 5), enter the required group address in the fields and end with OK!

16.4.6 EIS 6, SCALING

Right-click on Byte in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



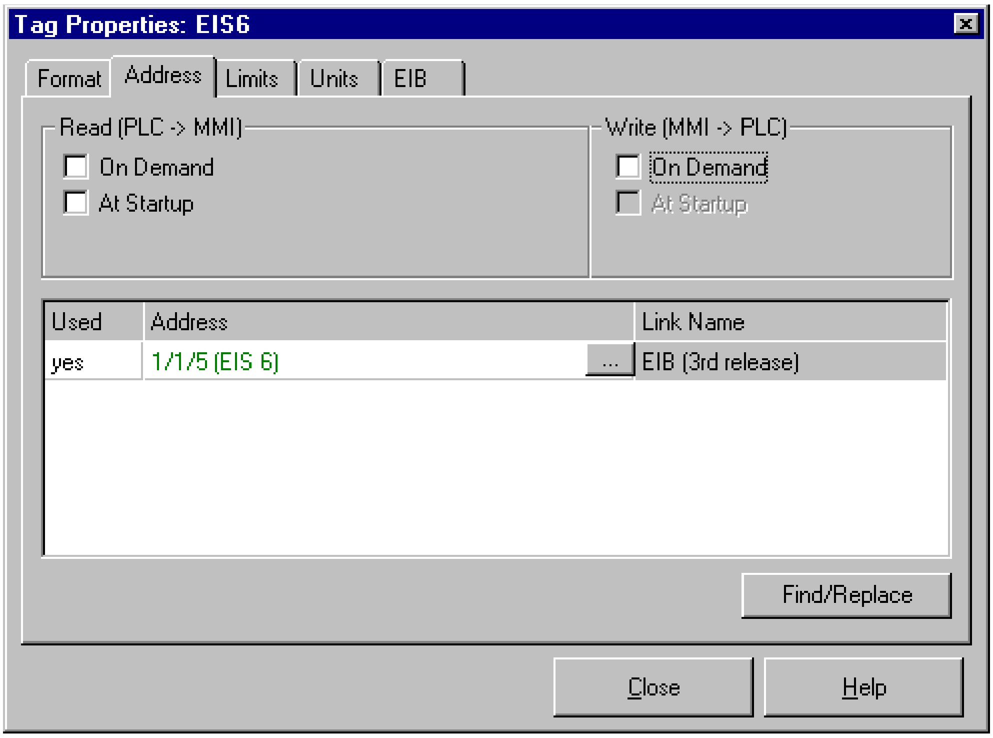
Now double-click the new tag created or press the Enter key again. This will open the Tag Definition window!



Anzahl Elemente : 1

Anzeigeformat: Dezimal

Set the display format to Decimal.
To create a single addressed tag, leave the setting at Number of Elements in the Format tab on 1.
Now move to the Address tab.

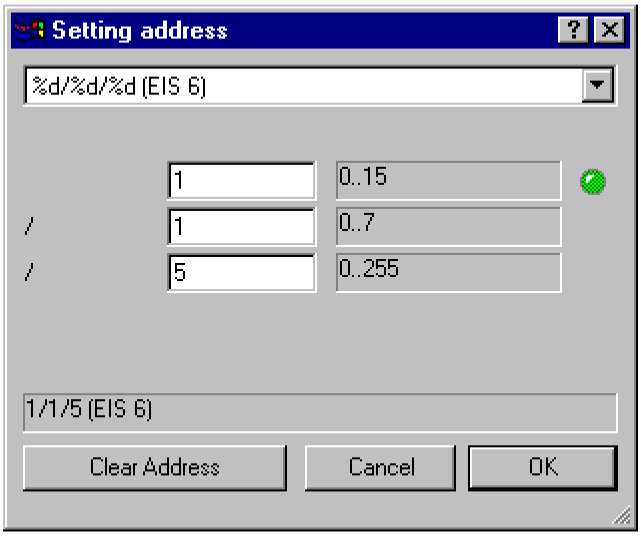


Read (PLC -> MMI)
□ On Demand
□ At Startup

Write (MMI -> PLC)
□ On Demand
□ At Startup

Used	Address	Link Name
yes	1/1/5 (EIS 6)	EIB (3rd release)

Double-clicking Address will open the Set Address dialog.



Setting address

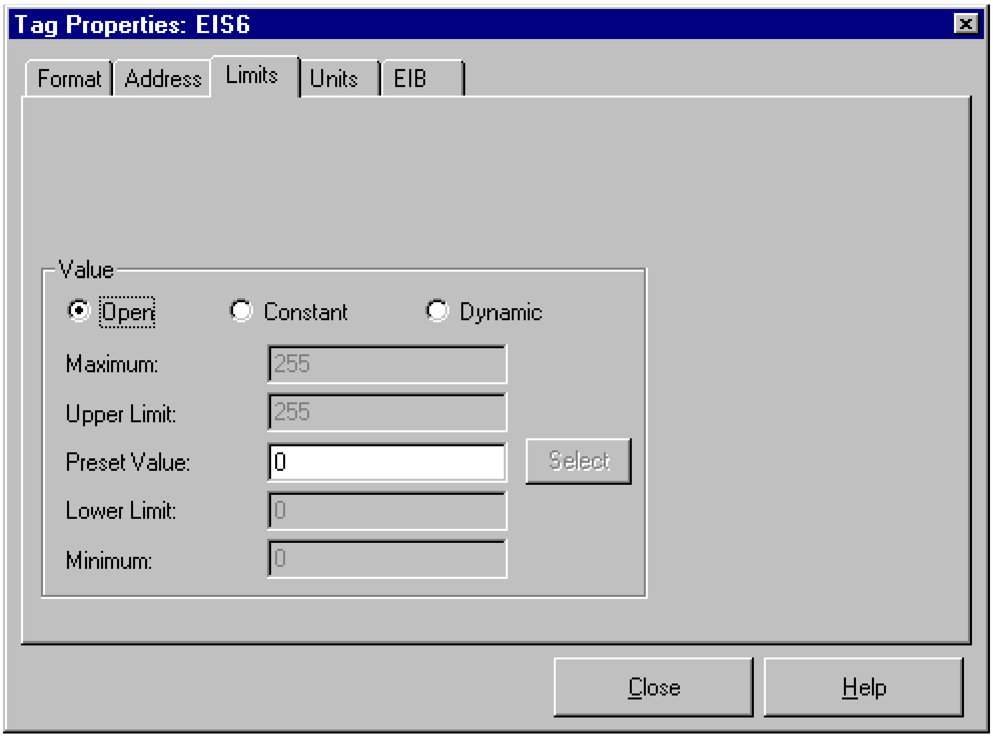
%d/%d/%d (EIS 6)

	1	0..15
/	1	0..7
/	5	0..255

1/1/5 (EIS 6)

Select the syntax with (EIS 6). Then enter the required group address in the fields and complete your entry by clicking OK!

Now move to the Limits tab.



Tag Properties: EIS6

Value

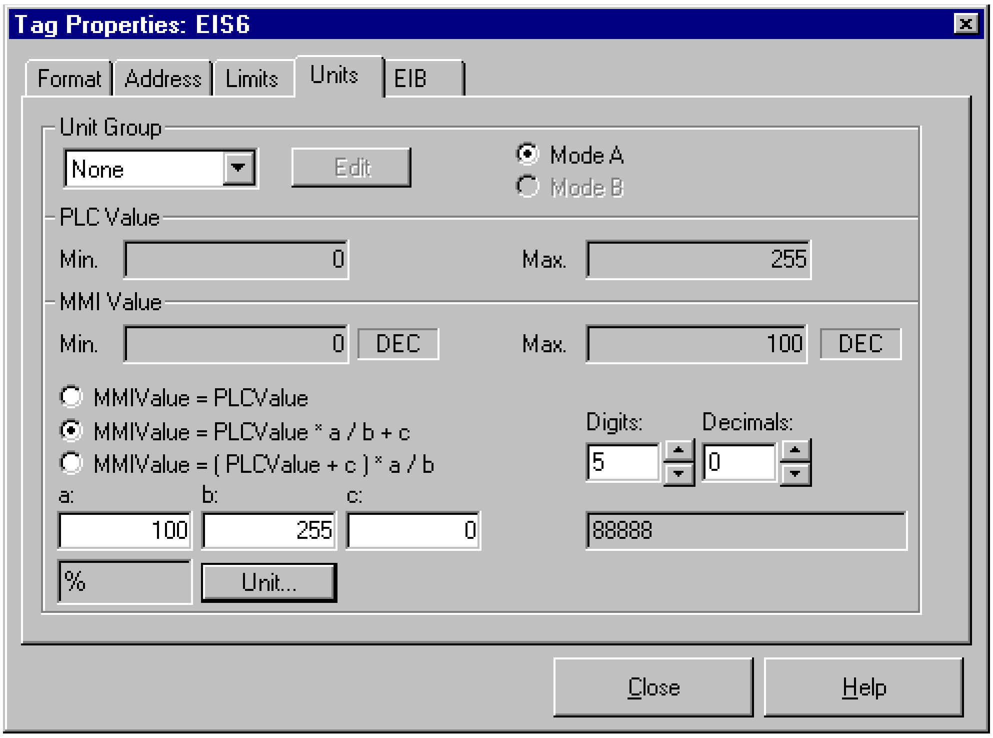
● Open ○ Constant ○ Dynamic

Maximum:	255
Upper Limit:	255
Preset Value:	0
Lower Limit:	0
Minimum:	0

The settings for Limits define the limits of an entry, e.g. Keyboard entry.

Leave the settings on Open if you wish to read values from the EIB, e.g. status values with dimming.

Move to the Unit of Measurement tab.



Tag Properties: EIS6

Format | Address | Limits | Units | EIB

Unit Group: None | Edit | ● Mode A | ○ Mode B

PLC Value: Min. 0 | Max. 255

MMI Value: Min. 0 DEC | Max. 100 DEC

○ MMIValue = PLCValue
● MMIValue = PLCValue * a / b + c
○ MMIValue = (PLCValue + c) * a / b

a: 100 | b: 255 | c: 0

%

Unit...

Digits: 5 | Decimals: 0

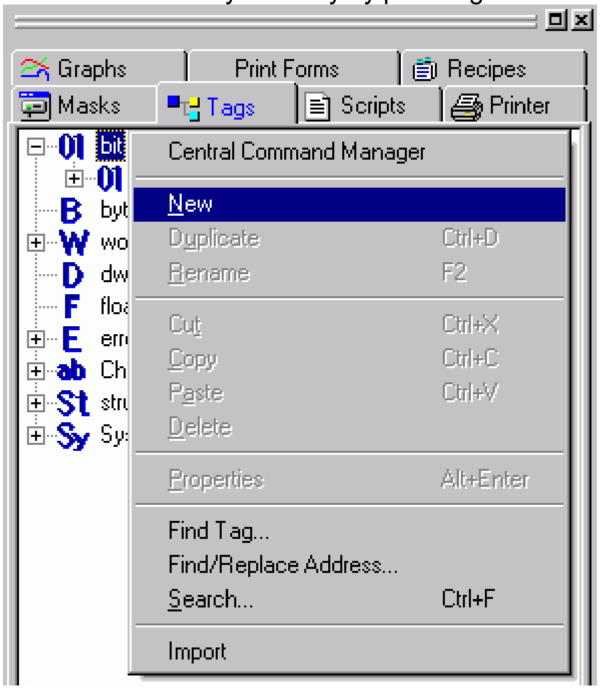
88888

Close | Help

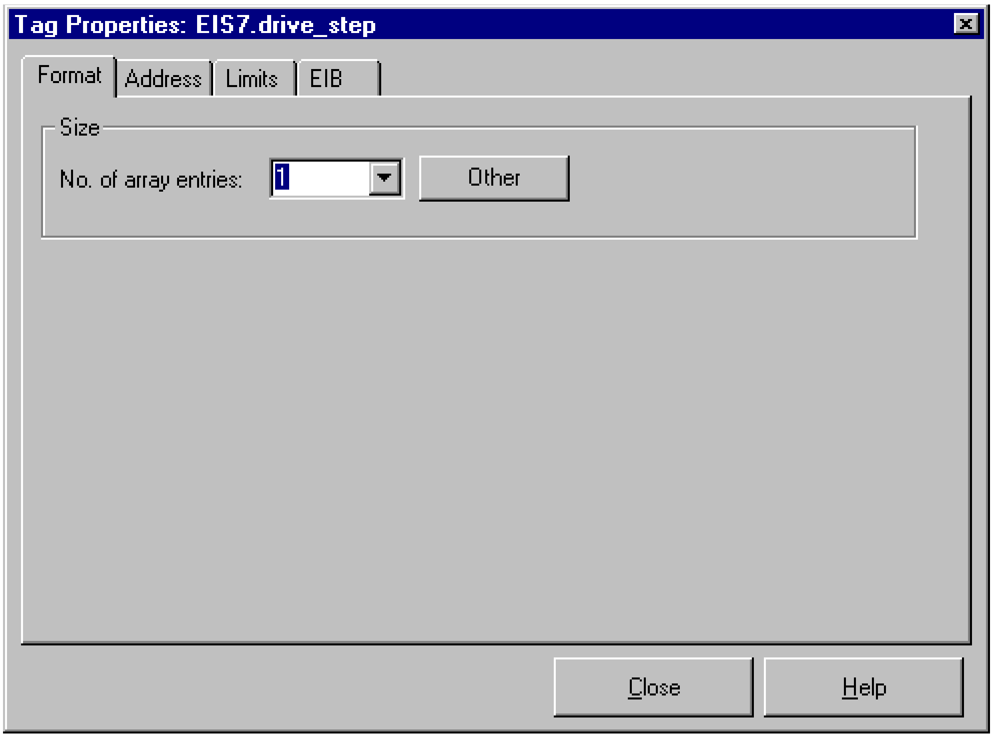
This can use a formula to convert values that are read via EIB into a display value. This example shows a value 0 – 255 that is read via EIB, and is to be displayed as a percentage 0 – 100%.

16.4.7 EIS 7, DRIVE CONTROL / MOVE

Right-click on Bit in Project Overview → Tags. Click New to create a new tag for Control. Enter a name and confirm your entry by pressing Enter.

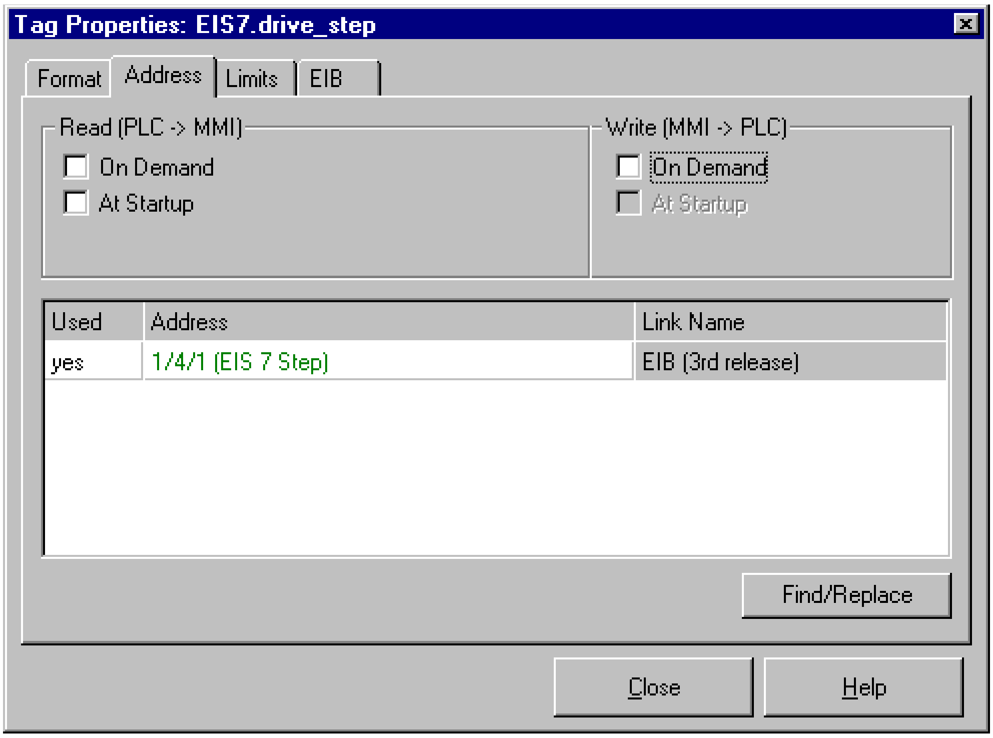


Repeat the step in order to create a second tag (move).
Now double-click the new tag created or press the Enter key again.



No. of array entries: 1

This will open the Tag Definition window!
Leave the setting in the 'Format' tab at 1 under 'Number of Elements'.
Now move to the Address tab.

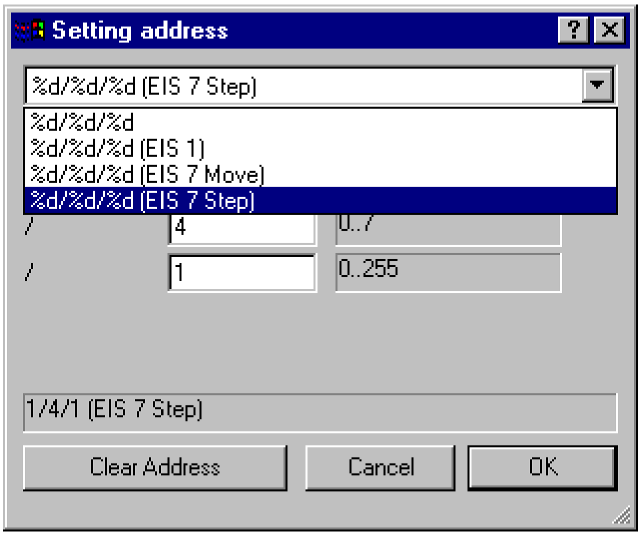


Read (PLC -> MMI)
□ On Demand
□ At Startup

Write (MMI -> PLC)
□ On Demand
□ At Startup

Used	Address	Link Name
yes	1/4/1 (EIS 7 Step)	EIB (3rd release)

Double-clicking Address will open the Set Address dialog.



Setting address

%d/%d/%d (EIS 7 Step)

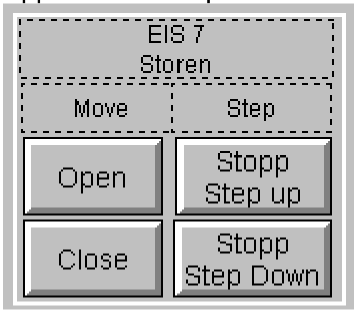
%d/%d/%d
%d/%d/%d (EIS 1)
%d/%d/%d (EIS 7 Move)
%d/%d/%d (EIS 7 Step)

/ 4 0..7
/ 1 0..255

1/4/1 (EIS 7 Step)

Select the syntax with 'EIS 7 Step' and 'EIS 7 Move'. For both tags created enter the required group address in the fields and end with OK!

Application example:



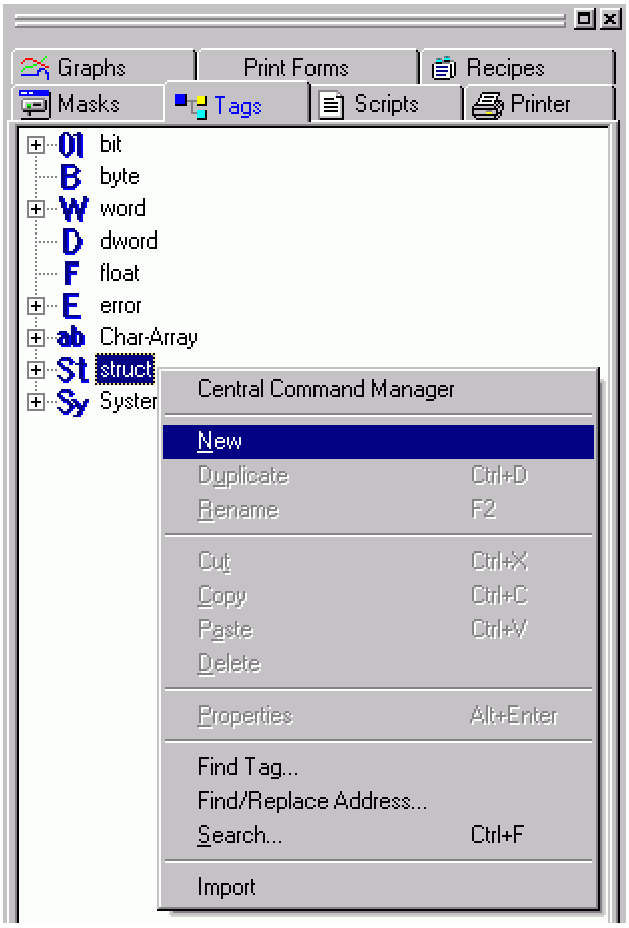
The button object with the settings 'DEL Bit' and 'Slope' is used for EIS 7 Step and Move.
Move Open → DEL Bit and Slope
Move Close → Set Bit and Slope
Step : Stop, Step up → DEL Bit and Slope
Step : Stop, Step down → Set Bit and Slope

16.4.8 EIS 8, PRIORITY / CONTROL

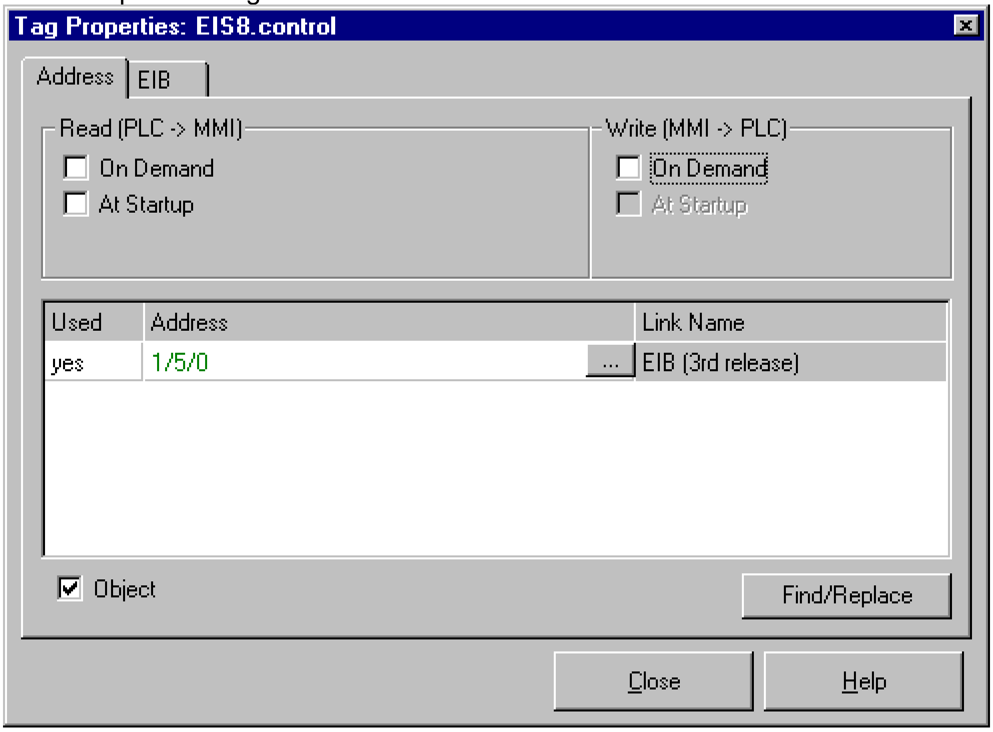
Right-click on Structure in Project Overview → Tags.

Click New to create a new structure. Enter a name and confirm your entry by pressing Enter. Right-click the created structure and choose New to create a new tag as a Bit (position). Enter a name and confirm your entry with Enter.

Repeat the step in order to create a second tag (control).



Now double-click the new structure created or press the Enter key again.
This will open the Tag Definition window!


Tag Properties: EIS8.control

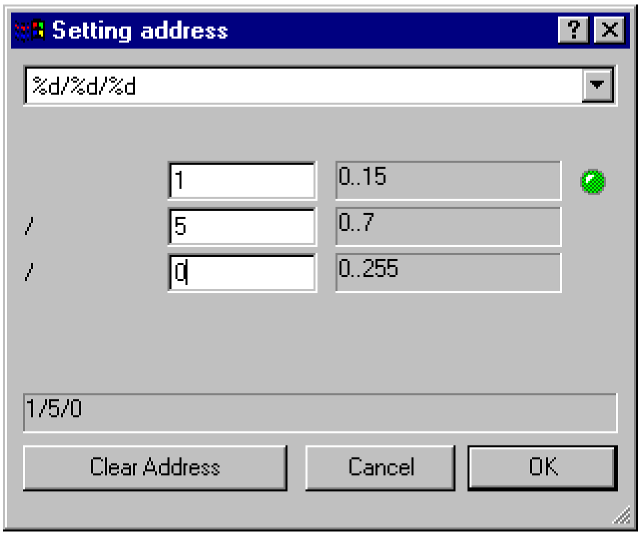
Read (PLC -> MMI): □ On Demand □ At Startup

Write (MMI -> PLC): □ On Demand □ At Startup

Used	Address	Link Name
yes	1/5/0 ...	EIB (3rd release)

☑ Object

For Type define the structure as an Object. This setting causes both tags in the structure to have the same address and to be transferred to the EIB as an object.
Double-clicking Address will open the Set Address window.

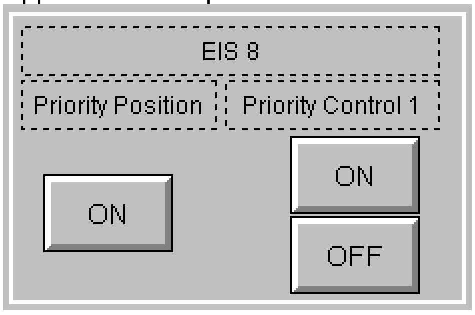


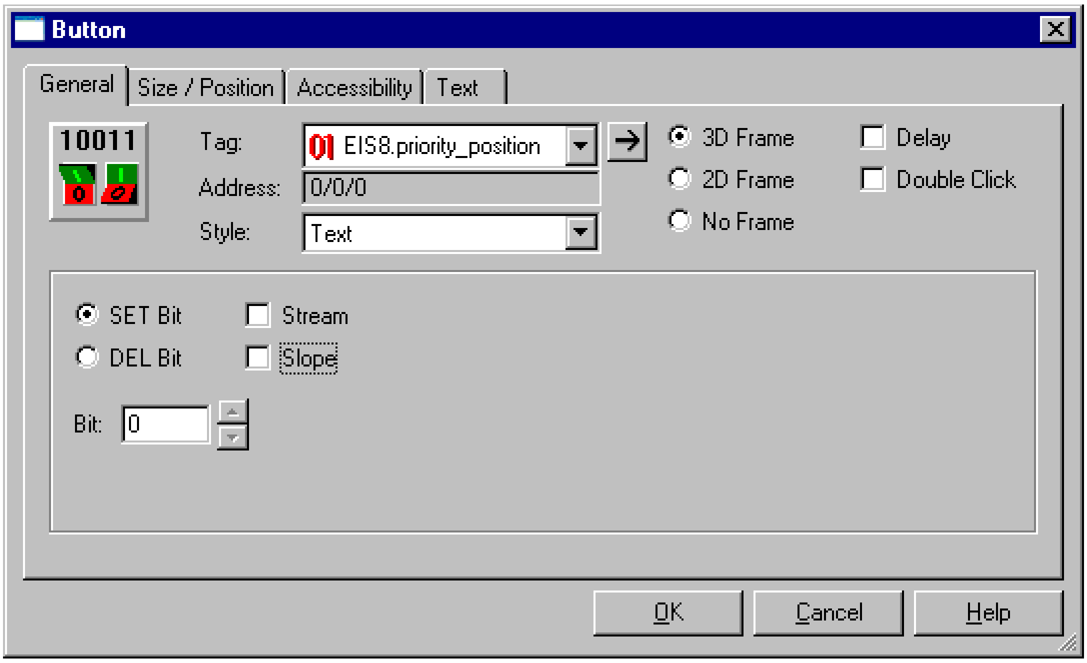
%d/%d/%d

	1	0..15
/	5	0..7
/	0	0..255

1/5/0

Enter the required group address in the fields and complete your entry by clicking OK!
Application example:





Tag: EIS8.priority_position
Address: 0/0/0
Style: Text

● 3D Frame
○ 2D Frame
○ No Frame

□ Delay
□ Double Click

● SET Bit
○ DEL Bit

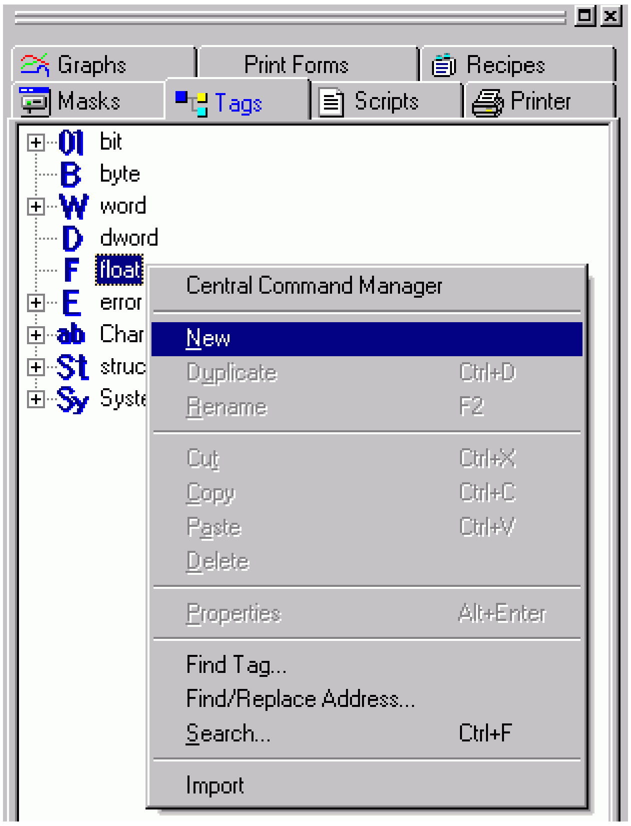
□ Stream
□ Slope

Bit: 0

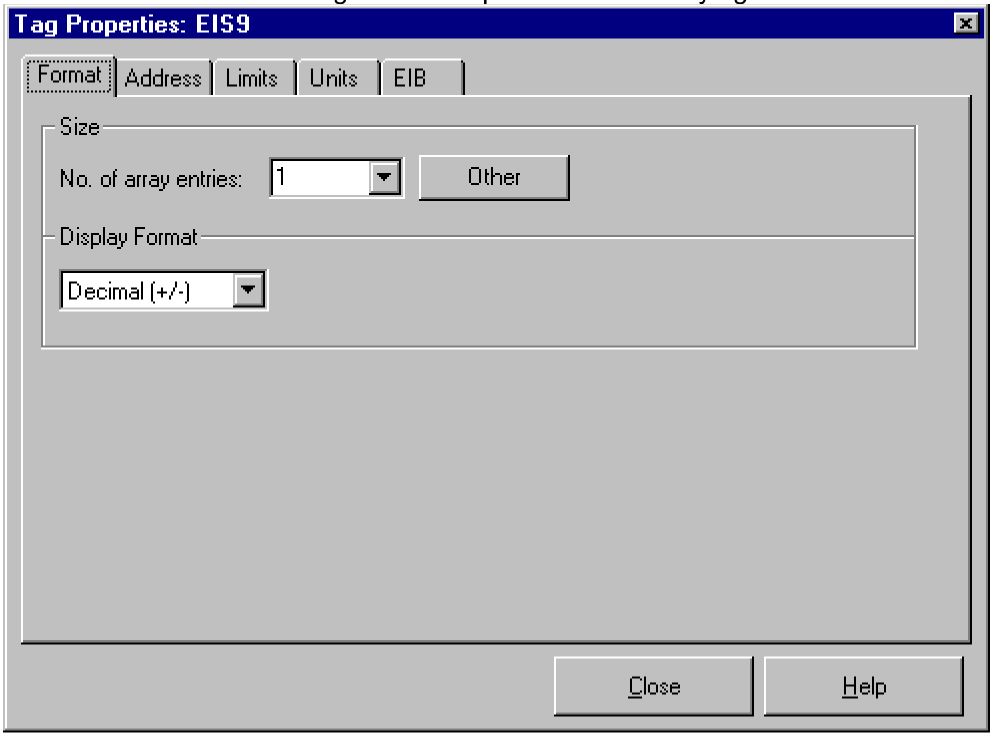
The object button can be used for EIS 8 Priority and Control with the following settings:
Priority ON → Set Bit
Priority Control ON → Set Bit and Slope
Priority Control OFF → DEL Bit and Slope

16.4.9 EIS 9, FLOAT

Right-click on Float in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



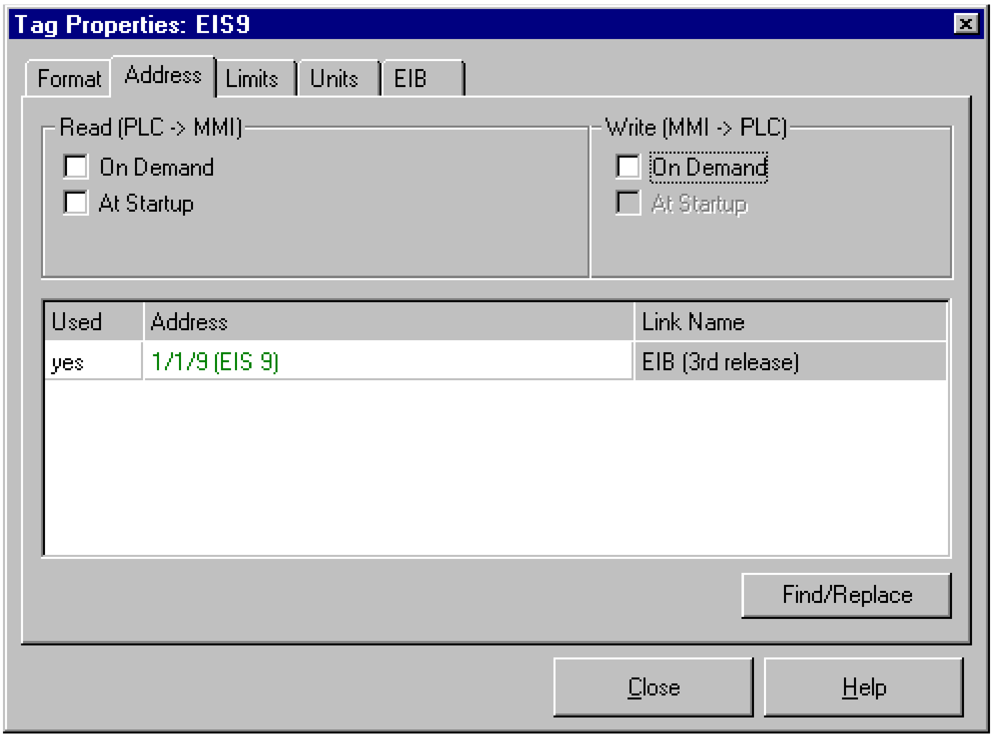
Now double-click the new tag created or press the Enter key again.



No. of array entries: 1

Decimal (+/-)

This will open the Tag Definition window!
Leave the setting in the 'Format' tab at 1 under 'Number of Elements'.
Now move to the Address tab.



Tag Properties: EIS9

Format | Address | Limits | Units | EIB

Read (PLC -> MMI)
□ On Demand
□ At Startup

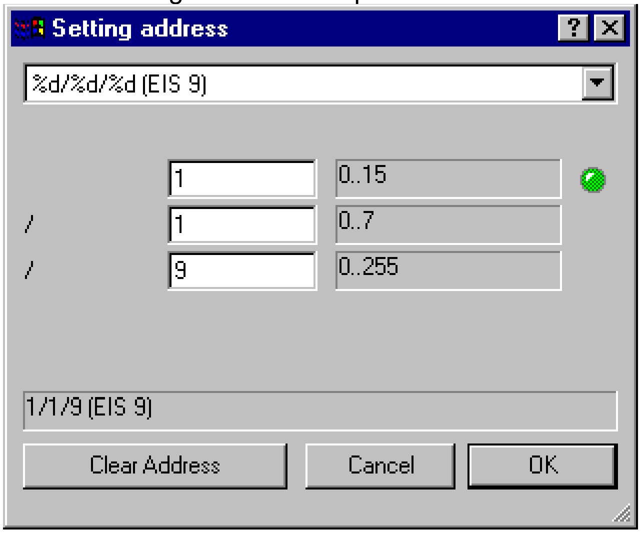
Write (MMI -> PLC)
□ On Demand
□ At Startup

Used	Address	Link Name
yes	1/1/9 (EIS 9)	EIB (3rd release)

Find/Replace

Close | Help

Double-clicking Address will open the Set Address dialog.



Setting address

%d/%d/%d (EIS 9)

	1	0..15
/	1	0..7
/	9	0..255

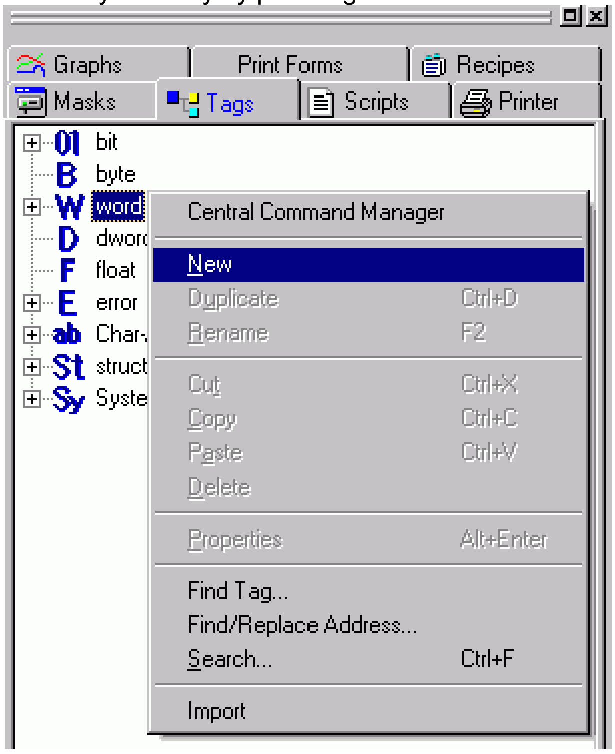
1/1/9 (EIS 9)

Clear Address | Cancel | OK

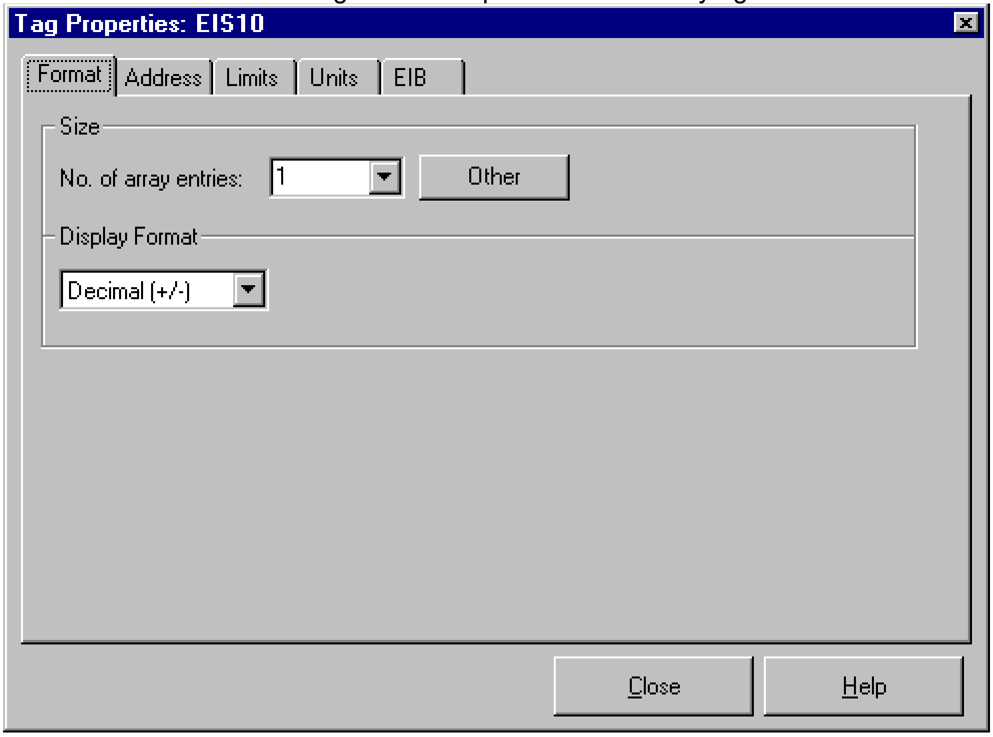
Select the syntax with EIS 9, enter the required group address in the fields and end with OK!

16.4.10 EIS 10, 16 BIT COUNTER

Right-click on Word in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



Now double-click the new tag created or press the Enter key again.



Tag Properties: EIS10

Size

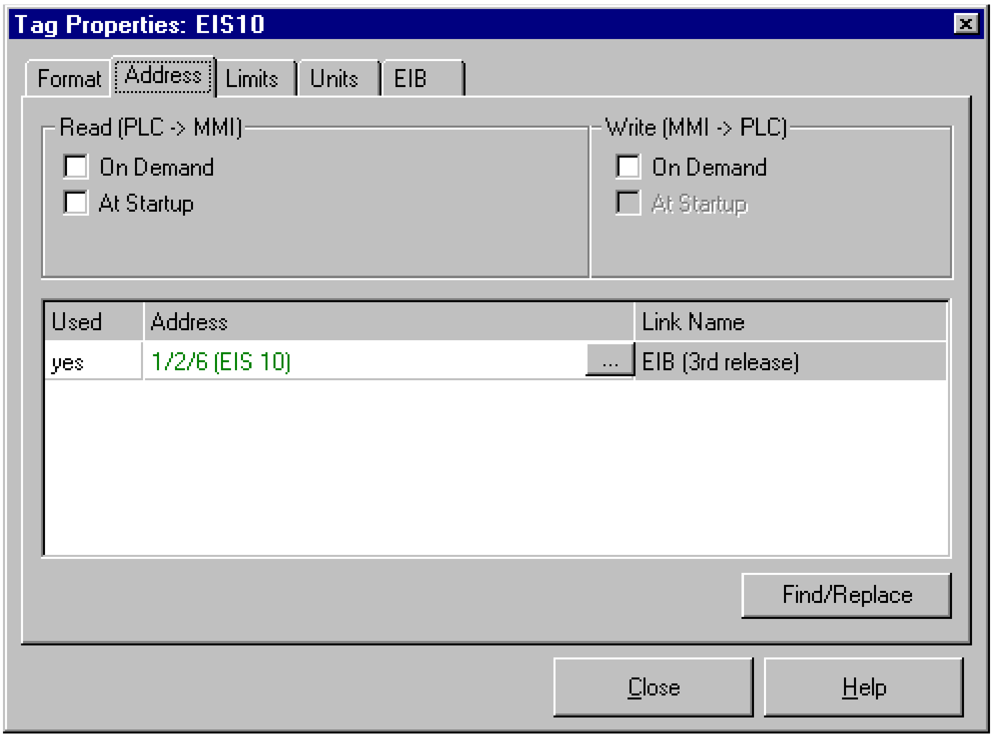
No. of array entries: 1

Other

Display Format

Decimal (+/-)

This will open the Tag Definition window!
Set the display format to decimal or Decimal +/-, signed or unsigned. Leave the setting in the 'Format' tab at 1 under 'Number of Elements'.
Now move to the Address tab.

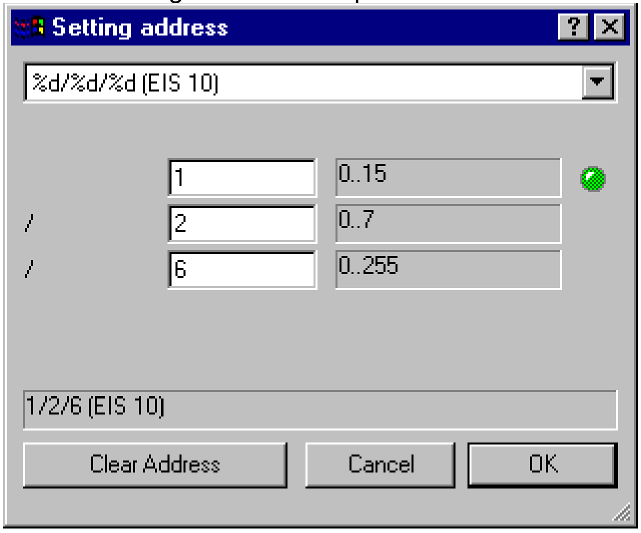


Read (PLC -> MMI)
☐ On Demand
☐ At Startup

Write (MMI -> PLC)
☐ On Demand
☐ At Startup

Used	Address	Link Name
yes	1/2/6 (EIS 10)	EIB (3rd release)

Double-clicking Address will open the Set Address dialog.



%d/%d/%d (EIS 10)

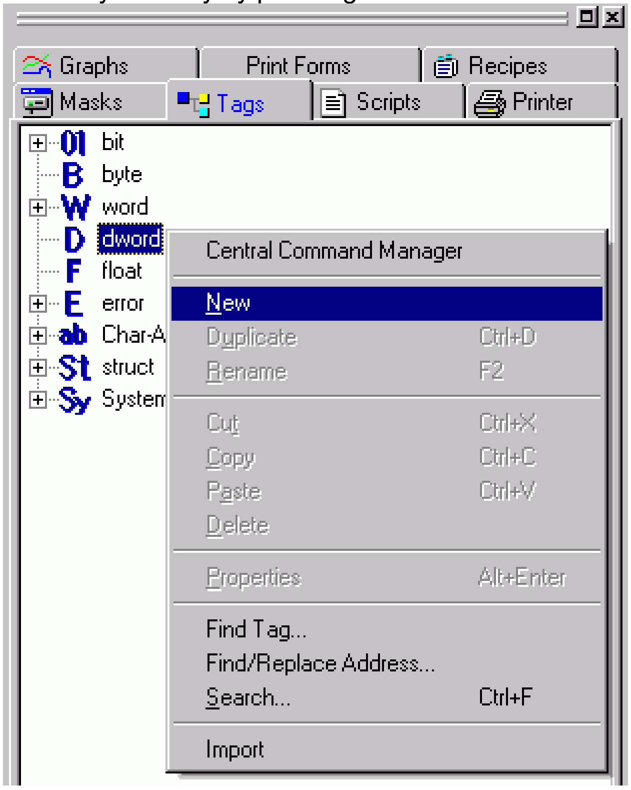
	1	0..15
/	2	0..7
/	6	0..255

1/2/6 (EIS 10)

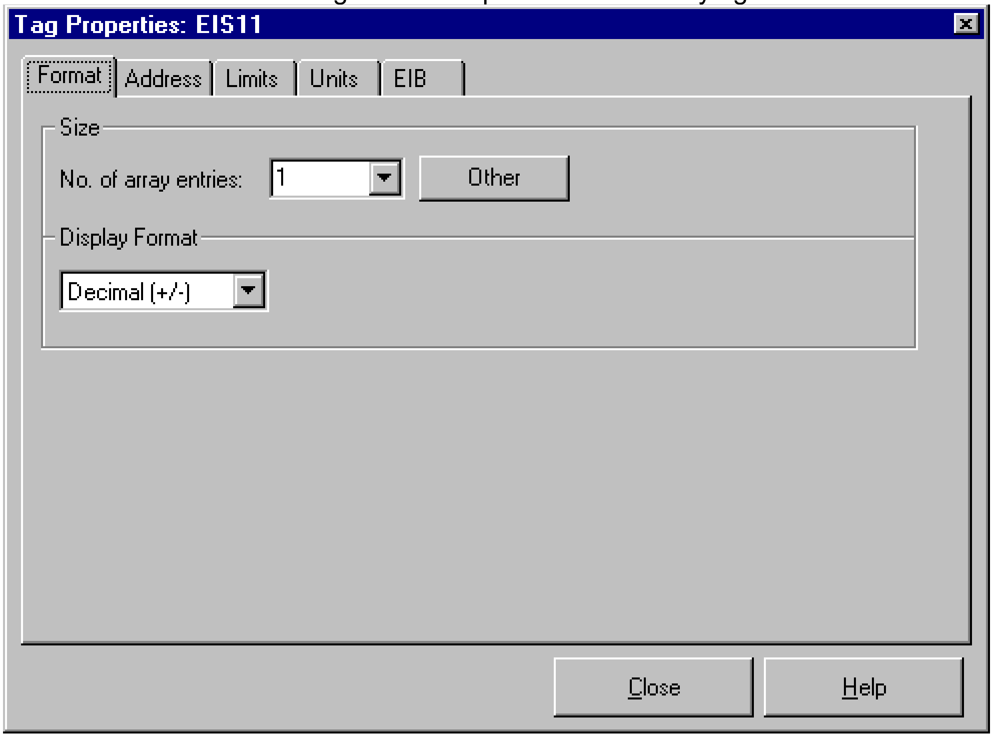
Select the syntax with EIS 10, enter the required group address in the fields and end with OK! The Limits tab is used to define the limits of an entry, e.g. Keyboard entry. Leave the settings on Open if you wish to read values from the EIB. In the Unit of Measurement tab, a formula can be used to convert values that are read via EIB into a display value.

16.4.11 EIS 11, 32 BIT COUNTER

Right-click on DWord in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



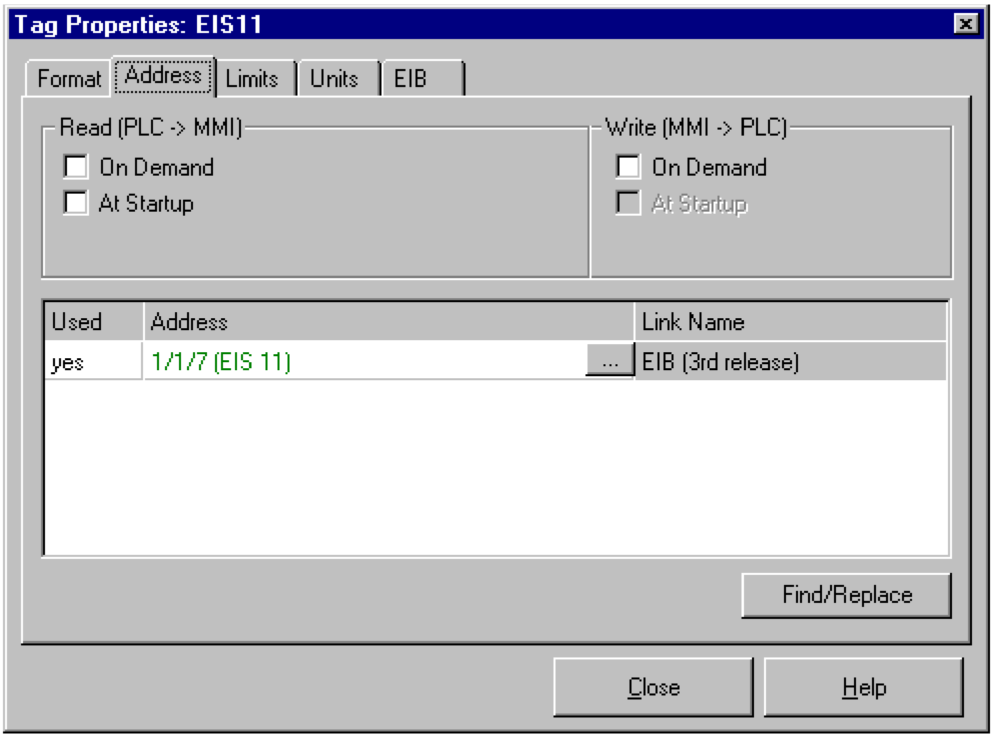
Now double-click the new tag created or press the Enter key again.


Tag Properties: EIS11

No. of array entries: 1

Decimal (+/-)

This will open the Tag Definition window!
Set the display format to decimal or Decimal +/-, signed or unsigned. Leave the setting in the 'Format' tab at 1 under 'Number of Elements'.
Now move to the Address tab.

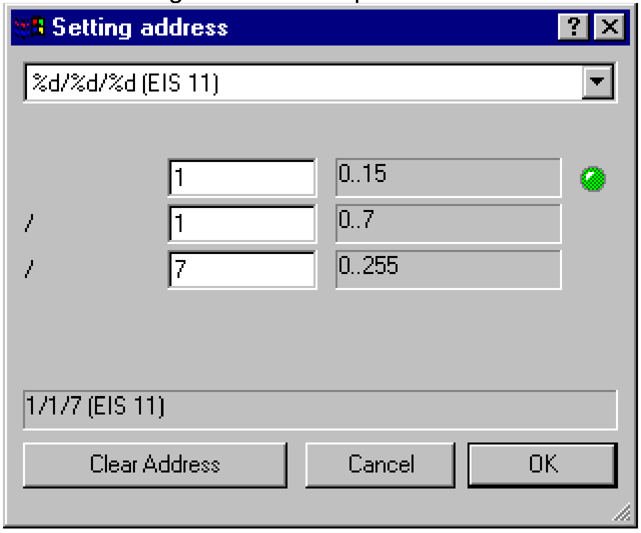


Read (PLC -> MMI)
□ On Demand
□ At Startup

Write (MMI -> PLC)
□ On Demand
□ At Startup

Used	Address	Link Name
yes	1/1/7 (EIS 11)	EIB (3rd release)

Double-clicking Address will open the Set Address dialog.



%d/%d/%d (EIS 11)

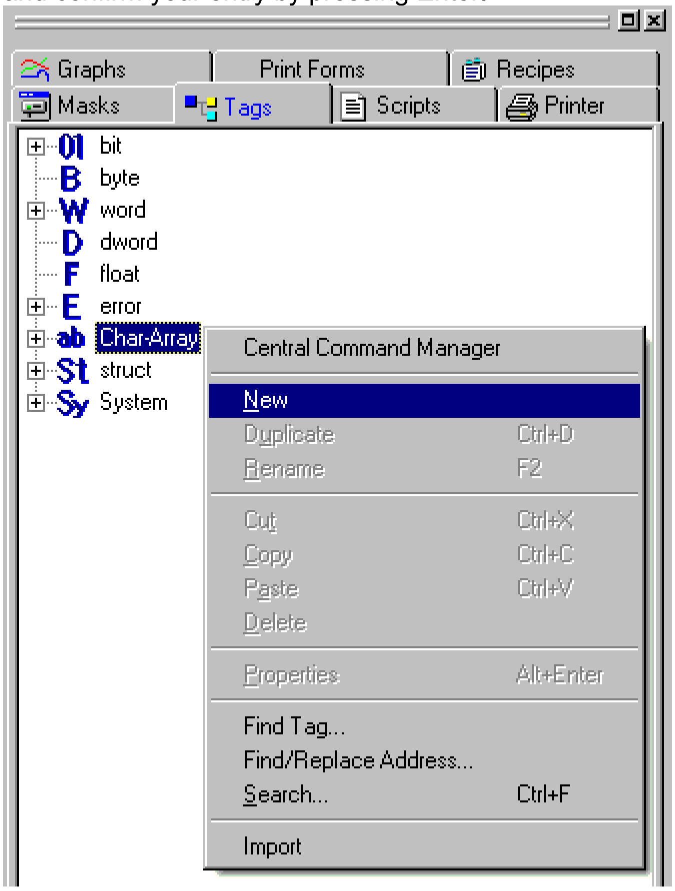
	1	0..15
/	1	0..7
/	7	0..255

1/1/7 (EIS 11)

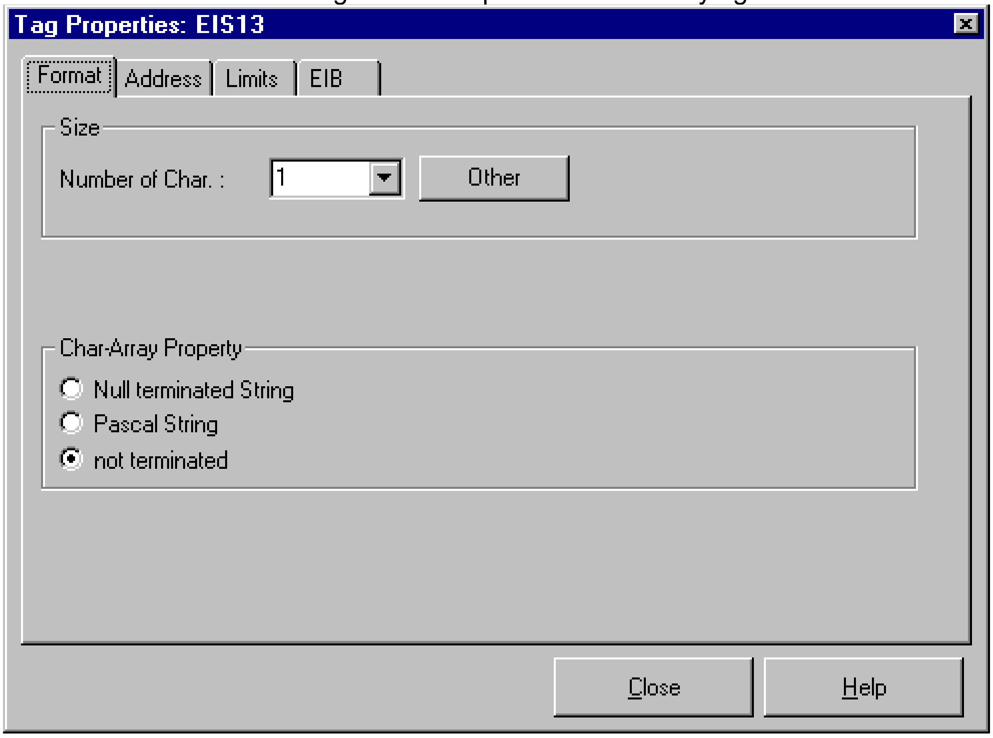
Select the syntax with EIS 11, enter the required group address in the fields and end with OK!
The Limits tab is used to define the limits of an entry, e.g. Keyboard entry.
Leave the settings on Open if you wish to read values from the EIB.
In the Unit of Measurement tab, a formula can be used to convert values that are read via EIB into a display value.

16.4.12 EIS 13, ASCII CHARACTER

Right-click on Char Array in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



Now double-click the new tag created or press the Enter key again.


Tag Properties: EIS13

Size

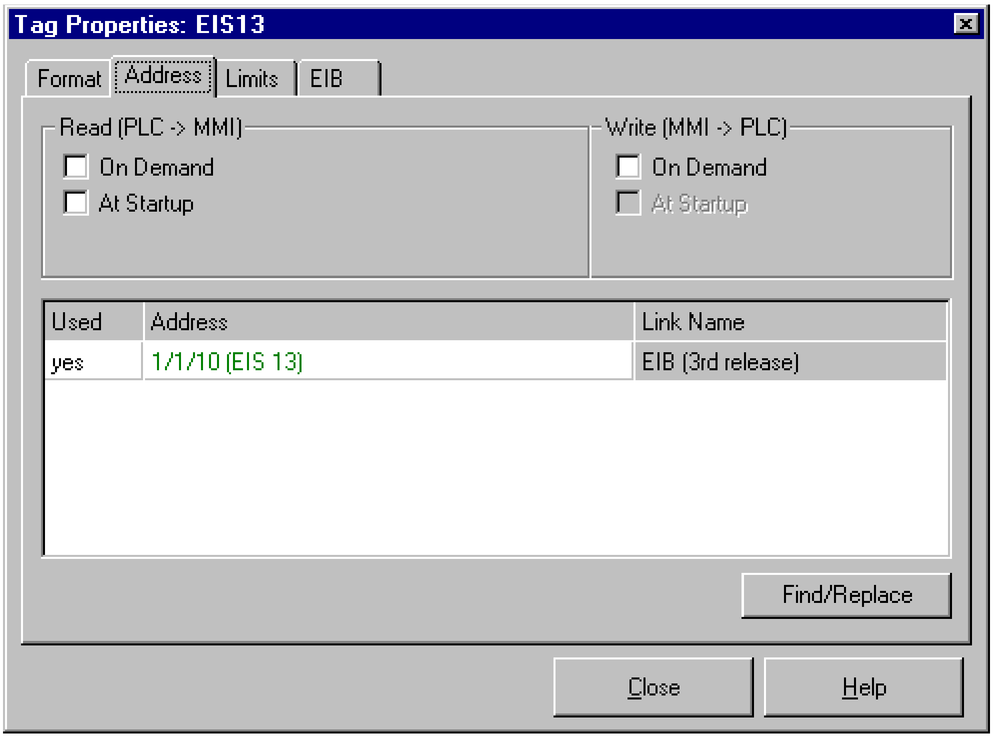
Number of Char. : 1

Char-Array Property

○ Null terminated String
○ Pascal String
● not terminated

This will open the Tag Definition window!

As EIS 13 only supports 1 ASCII character leave the Number of letters setting in the Format tab at 1. Under Char Array settings do not select any termination.
Now move to the Address tab.



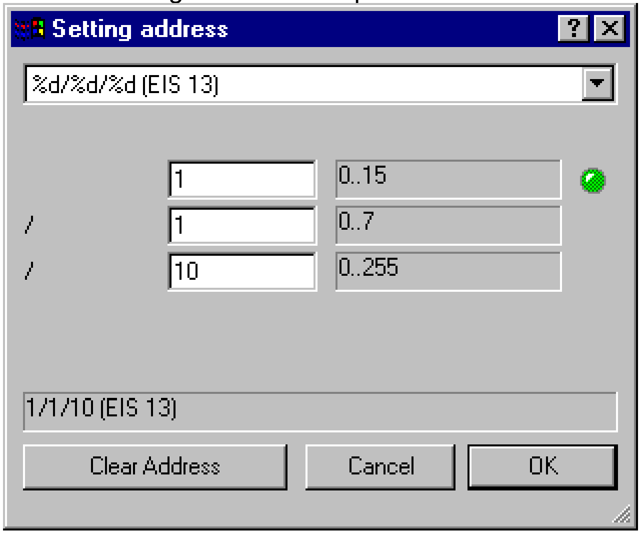
Tag Properties: EIS13

Read (PLC -> MMI)
☐ On Demand
☐ At Startup

Write (MMI -> PLC)
☐ On Demand
☐ At Startup

Used	Address	Link Name
yes	1/1/10 (EIS 13)	EIB (3rd release)

Double-clicking Address will open the Set Address dialog.



Setting address

%d/%d/%d (EIS 13)

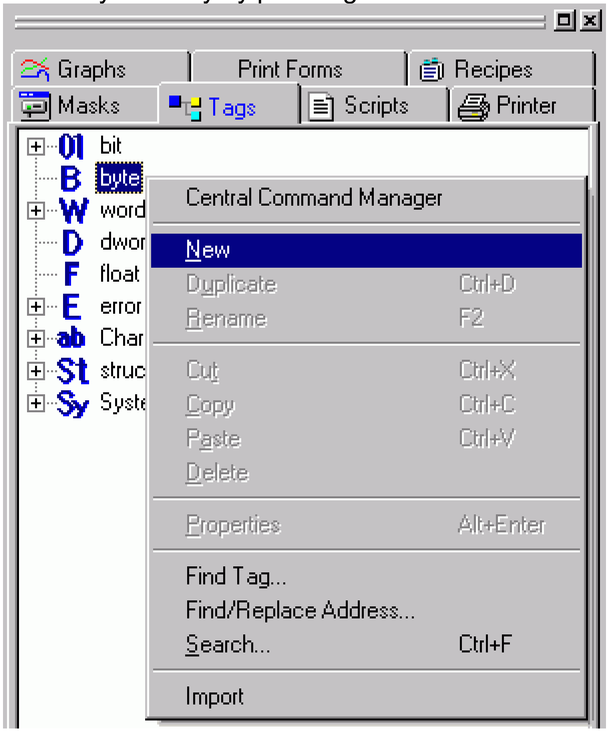
	1	0..15
/	1	0..7
/	10	0..255

1/1/10 (EIS 13)

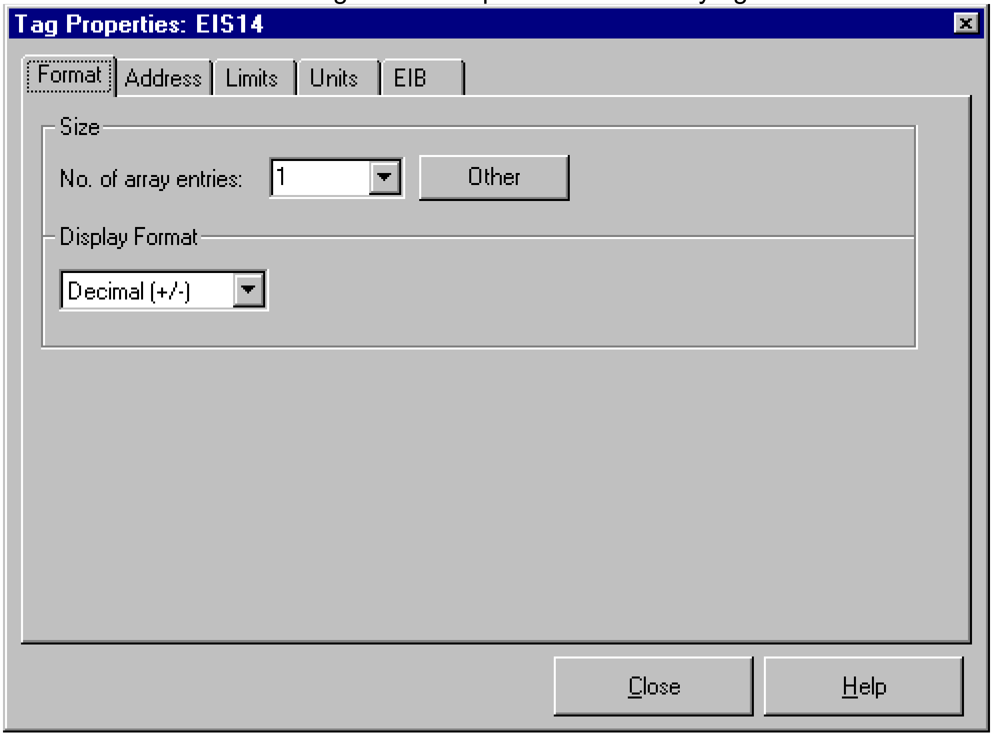
Select the syntax with EIS 13, enter the required group address in the fields and end with OK!

16.4.13 EIS 14, 8 BIT COUNTER

Right-click on Byte in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



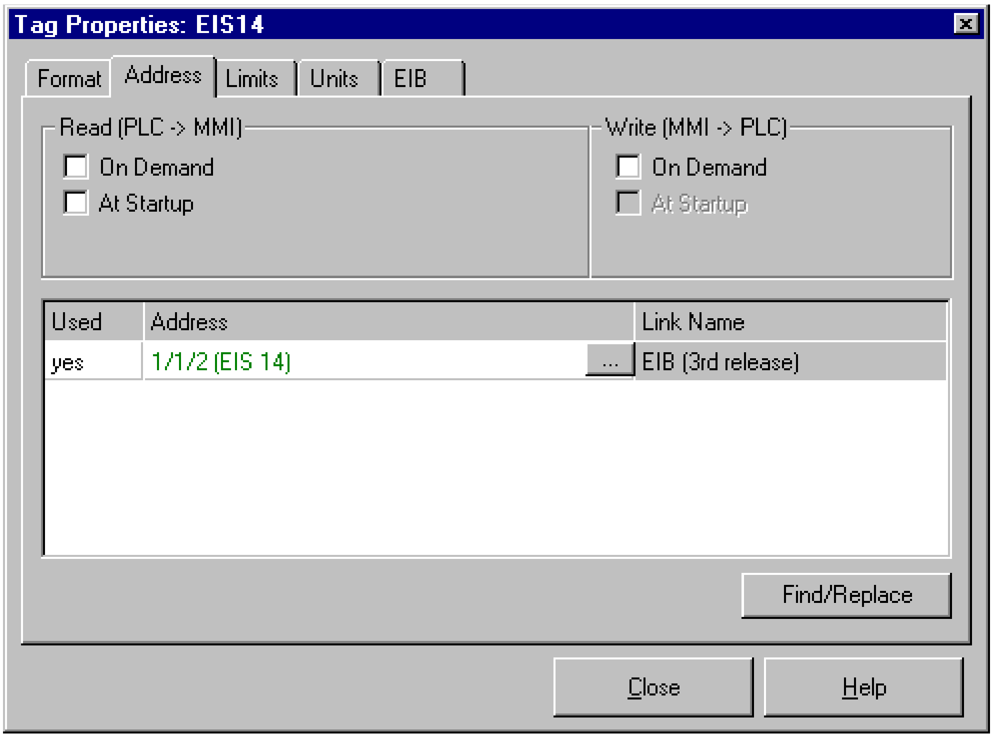
Now double-click the new tag created or press the Enter key again.



No. of array entries: 1

Decimal (+/-)

This will open the Tag Definition dialog!
Set the display format to decimal or Decimal +/-, signed or unsigned. Leave the setting in the 'Format' tab at 1 under 'Number of Elements'.
Now move to the Address tab.



Read (PLC -> MMI)

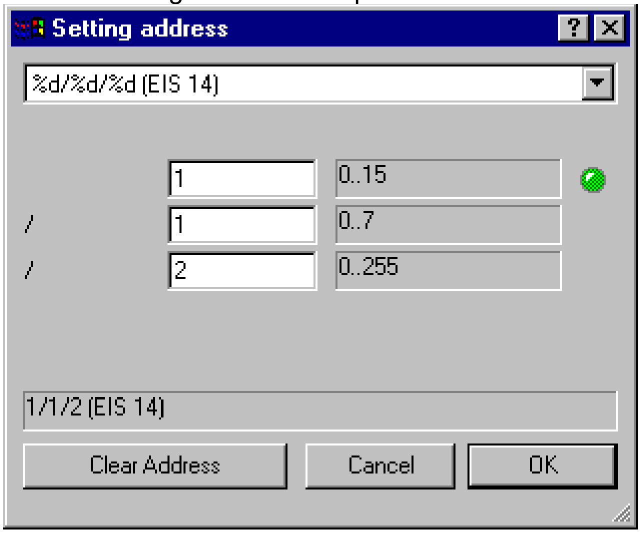
□ On Demand
□ At Startup

Write (MMI -> PLC)

□ On Demand
□ At Startup

Used	Address	Link Name
yes	1/1/2 (EIS 14)	EIB (3rd release)

Double-clicking Address will open the Set Address dialog.



%d/%d/%d (EIS 14)

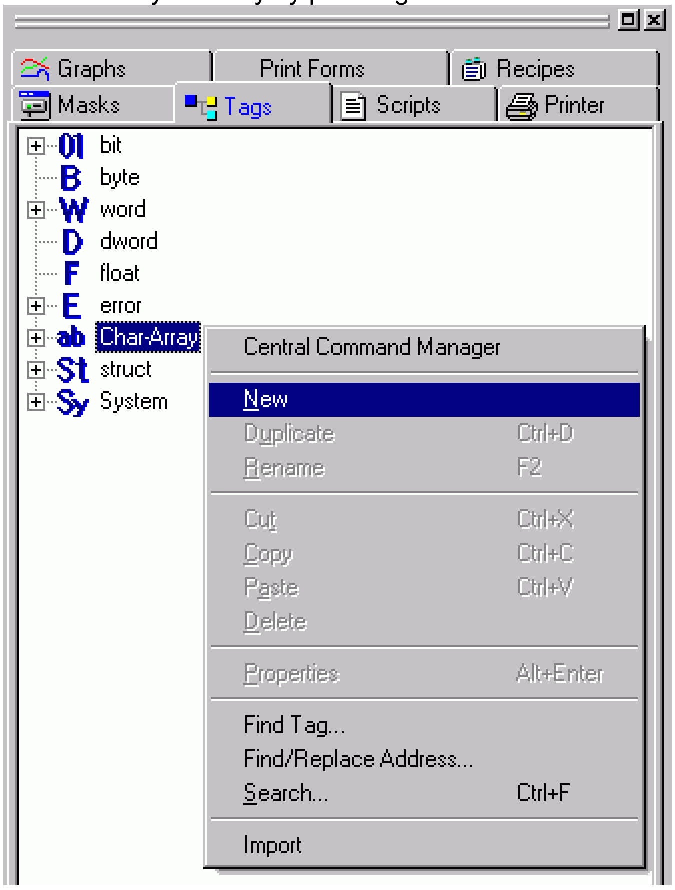
	1	0..15
/	1	0..7
/	2	0..255

1/1/2 (EIS 14)

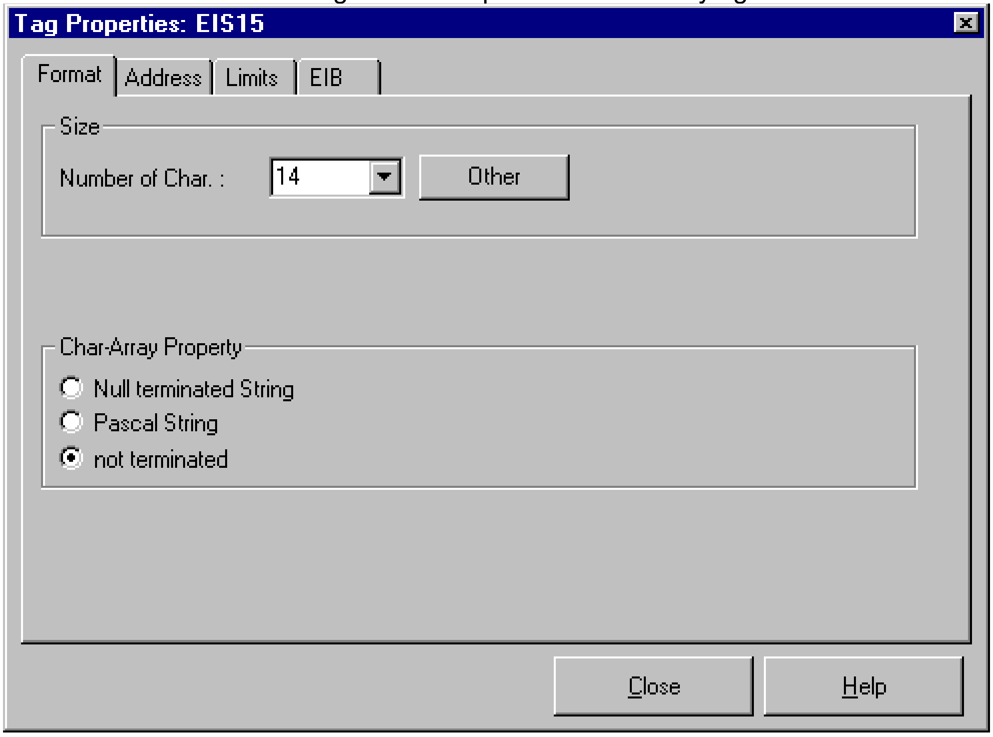
Select the syntax with EIS 14, enter the required group address in the fields and end with OK! The Limits tab is used to define the limits of an entry, e.g. Keyboard entry.Leave the settings on Open if you wish to read values from the EIB. In the Unit of Measurement tab, a formula can be used to convert values that are read via EIB into a display value.

16.4.14 EIS 15, EIB CHARACTER STRING

Right-click on Char Array in Project Overview → Tags. Click New to create a new tag. Enter a name and confirm your entry by pressing Enter.



Now double-click the new tag created or press the Enter key again.


Tag Properties: EIS15

Format | Address | Limits | EIB

Size

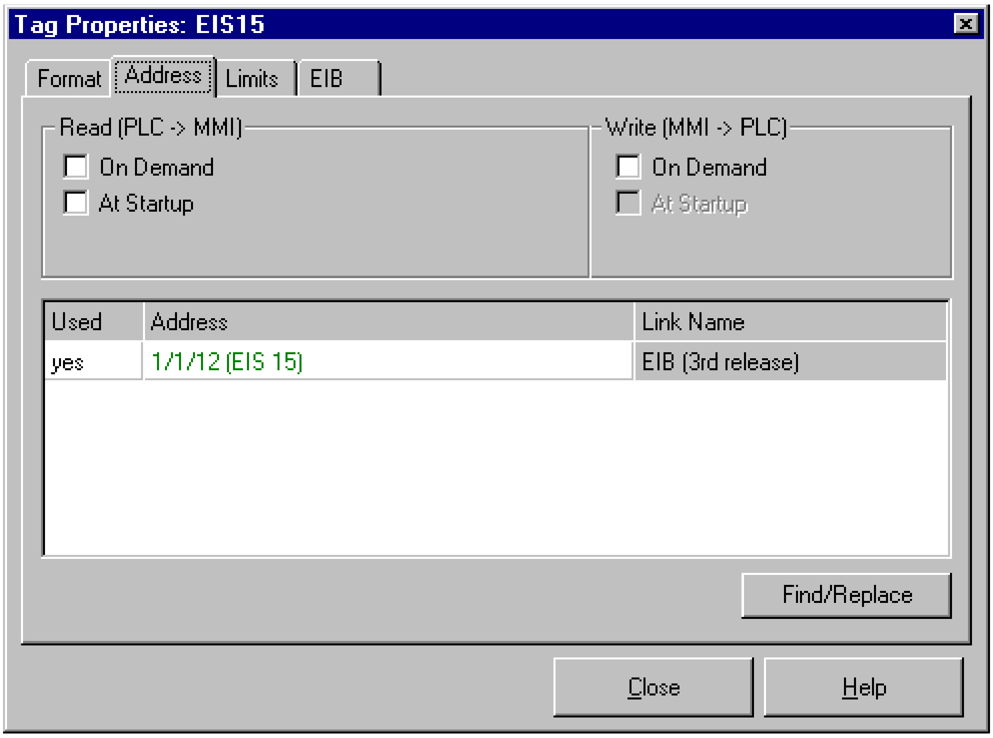
Number of Char. : 14 Other

Char-Array Property

○ Null terminated String
○ Pascal String
● not terminated

This will open the Tag Definition window!

As the object EIS 15 only supports 14 ASCII characters set the Number of letters setting in the Format tab to 14. Under Char Array settings do not enter any termination.
Now move to the Address tab.

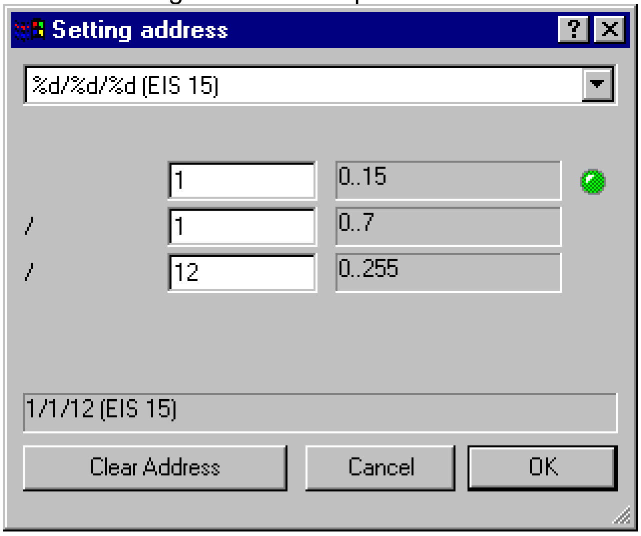


Read (PLC -> MMI)
□ On Demand
□ At Startup

Write (MMI -> PLC)
□ On Demand
□ At Startup

Used	Address	Link Name
yes	1/1/12 (EIS 15)	EIB (3rd release)

Double-clicking Address will open the Set Address dialog.



%d/%d/%d (EIS 15)

	1	0..15
/	1	0..7
/	12	0..255

1/1/12 (EIS 15)

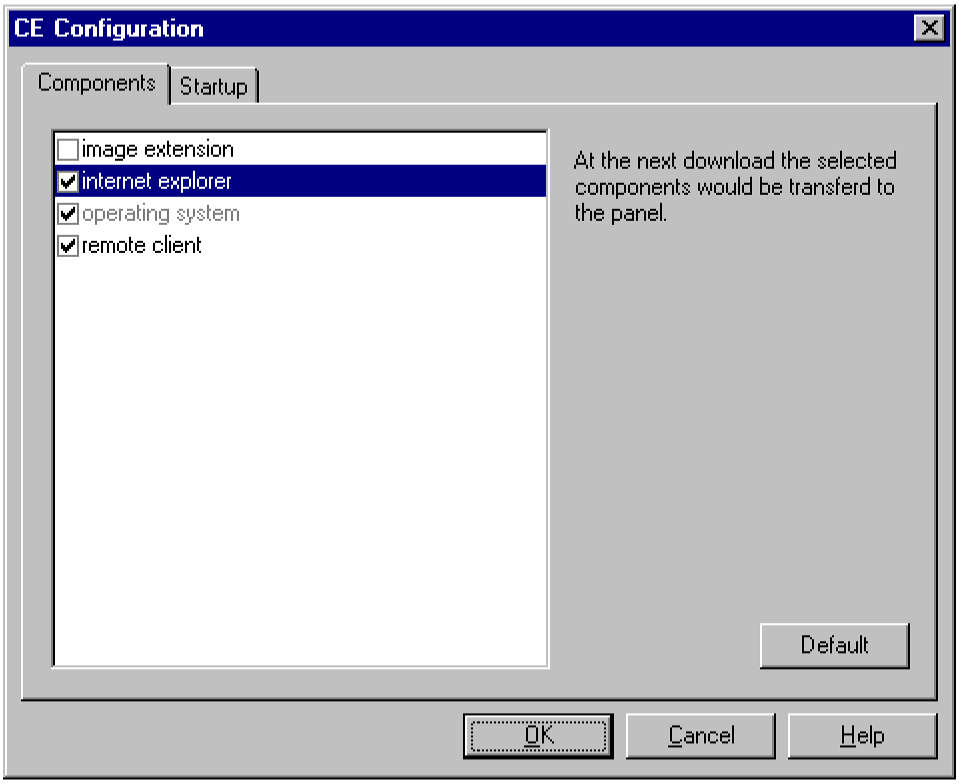
Select the syntax with EIS 15, enter the required group address in the fields and end with OK!

17 CE Configuration

17.1 CE Configuration

This file is only relevant for CE panels!
This determines which components are to be transferred to the MMI. The startup can also be changed here.
The settings are stored in a "<PROJECT>.INI" file.

17.2 Components



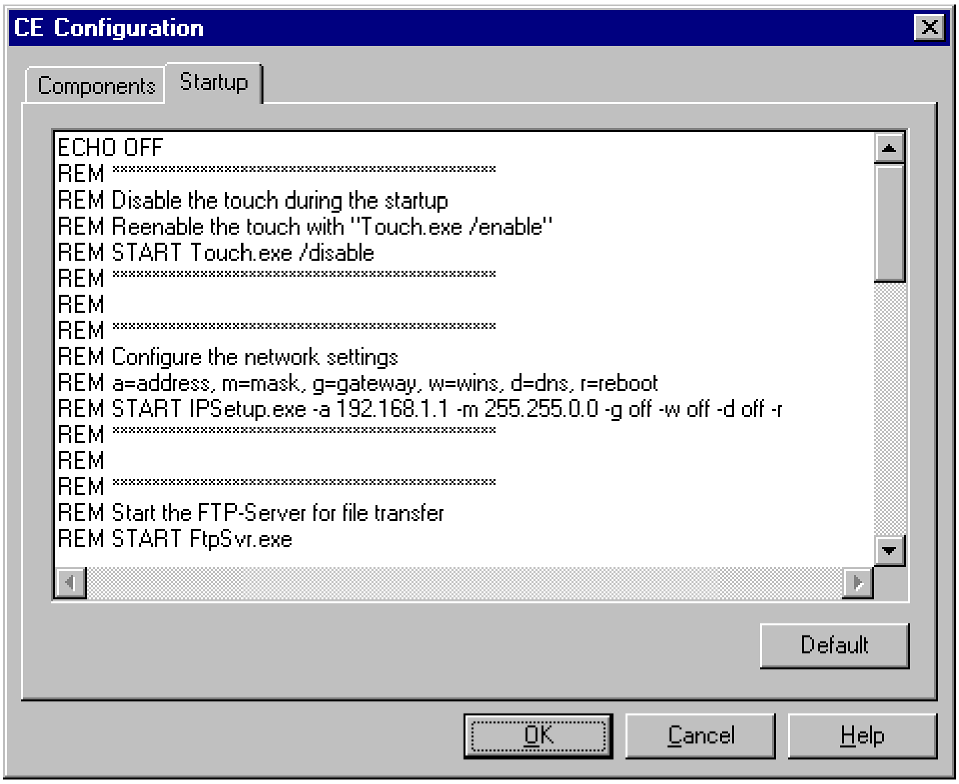
□ image extension
☑ internet explorer
☑ operating system
☑ remote client

At the next download the selected components would be transferd to the panel.

Shows all available components. All selected components are transferred during a download if the "Operation System and Components" option has been selected in the Download dialog.
Default
The standard settings of Galileo are reset.

See also Startup

17.3 Startup



```
ECHO OFF
REM ************************************************
REM Disable the touch during the startup
REM Reenable the touch with "Touch.exe /enable"
REM START Touch.exe /disable
REM ************************************************
REM
REM ************************************************
REM Configure the network settings
REM a=address, m=mask, g=gateway, w=wins, d=dns, r=reboot
REM START IPSetup.exe -a 192.168.1.1 -m 255.255.0.0 -g off -w off -d off -r
REM ************************************************
REM
REM ************************************************
REM Start the FTP-Server for file transfer
REM START FtpSvr.exe
```

Shows the currently defined startup behavior. When compiling the project, the "autoexec.bat" file is generated from these definitions.
When the panel is started up, this file is executed in the command processor (Cmd) of the CE operating system and can be used to copy files, start programs, display program icons on the desktop etc.
Default
The standard settings of Galileo are reset.

See also Components

17.4 INI File

17.4.1 INI File

This file is only relevant for CE panels!
The INI file defines which files are to be transferred to the device during a download and also the startup behavior.
The file is divided into three areas:
Components
Environments
Startup

17.4.2 Components

This area contains a list of all standard components of the device. Each component is assigned a value 0 or 1.

Note:
0: means that the component is not copied to the panel during a download
1: means that the component is **copied to the panel** during a download.

```
[COMPONENTS]
Operating System=1
Internet Explorer=0
...
```

Every component has a title with the name of the component such as [Operating System]. Each component has three entries: Files, Source Path and Dest Path.

Note:
User-specific components can also be added to the standard components. To do this, add your own components under [Components] and create a title with the same name. Under this new title insert the three entries: Files, Source Path and Dest Path.

Files

In this section, the files are listed without path and including suffix. Several files can be listed in succession if they are separated by a ';' character.
Example:
Files=FtpSvr.exe;FtpSvr.lnk;

Source Path

Defines the source directory of the files listed under 'Files'. The path can be used as an absolute path (including path) or with the Environments option.

Example: Absolute path	Example: Relative path
Source Path=C:\Data\	Source Path=%GALILEO%\OS\

Dest Path

Defines the destination folder for copying the files listed under 'Files'. The path can be defined as an absolute path (including drive) or relative to the Local/FTP Path. Environments can also be used in the directory.

17.4.3 Environments

The environments variables are used to define a text substitution. When something is read from the INI file, the environment variables are replaced by the text of the environment variables.

Note:
The %PROCESSOR% and %PANEL% environment variables must not be modified as they are set by Galileo according to the panel type in use! Other environment variables can be defined and must be used in the INI File.

The following environment variables are predefined:

%GALILEO%	: Directory where Galileo is installed
%PROJECT%	: Project directory

Example:
Source Path=%GALILEO%\OS\%PANEL%\
is replaced by
Source Path=C:\Program Files\Galileo\OS\GF2\

See also Components, Startup

17.4.4 STARTUP

The entries of this title are used in the compiler to generate the "Autoexec.bat" file. When the panel is started, this file is then run in the command processor (Cmd) of the CE operating system, and can be used for copying files, starting programs and displaying program icons on the desktop etc.
The individual entries are assigned numbers that have no meaning. It must simply be ensured that two numbers are not doubled.

18 Glossary

18.1 Glossary

- Application Loader
- Bitmap
- Control element
- Control block
- Data block
- Data synchronisation
- Dynamic object
- ERROR data block
- File dialog
- GPI
- GRS
- GRS.HLP
- GRSW
- GRSW1
- INFO data block
- Link
- Mainboard Firmware
- Mask
- MDI
- MMI
- Objects
- PLC
- Polling
- Project
- Project directory
- Runtime code
- Source project
- SRAM
- Static objects
- Status block
- Tag
- Toolbar
- Touch Panel
- Touch zone
- WARNING block
- WRITE data blocks
- Zones

Application Loader

The Application Loader is part of the mainboard firmware of the device. The Application Loader is first started when the device is started up. It then searches for a program which will start if found. The device will display the "waiting for host" message if no valid program is found.

Bitmap

Picture file in BMP format.

Control element

A control element is a field in a Windows dialog box (e.g. editing field, combo box, list box, ...)

Control block

The control data block together with the status data block are used for monitoring and indicating the status of communication between the MMI and the PLC.

See also "Status Block" and GRSGB.HLP.

Data block

Several tags that are combined to a data block are always transferred as one unit between the MMI and the PLC.

Data synchronisation

Check procedure to ensure that all stations connected to the MMI have the same data (Presetting).

See also Preset and chapter Data Synchronisation in GRS.HLP

Dynamic object

A drawing element that can change with an operation on the MMI or a data change in the PLC (e.g. button, value display or entry field, error text, ...).

ERROR data block

Error text that is displayed in the Error window if the error bit is set. The error text is not removed from the window until the error is acknowledged by hand.

The following events are logged (with date and time) in the Error history:

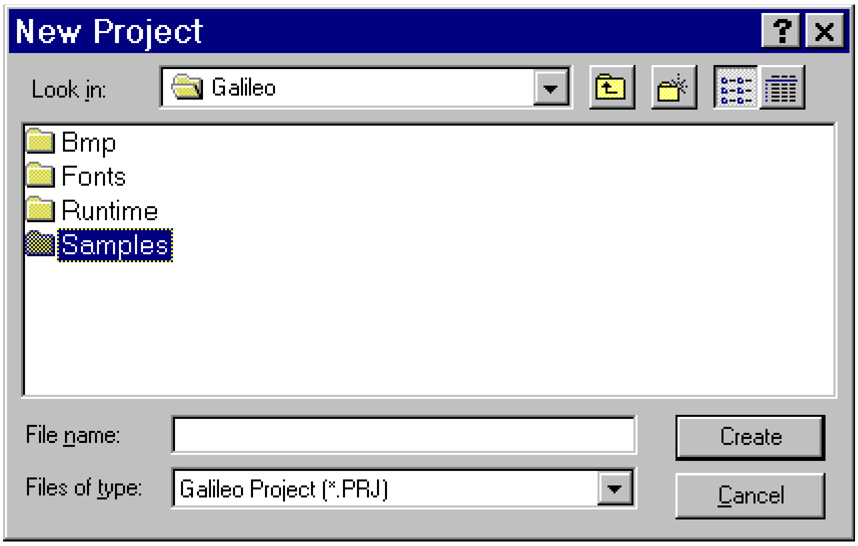
- Occurrence of error

- Removal of error

- Acknowledgement of error

File dialog

Standard dialog window for selecting a path and file name.



GPI

Galileo Project Inspector

This program is used for testing Galileo projects directly on the PC. Apart from a few exceptions, all the functions of the MMI unit can be tried out and tested on the PC.

See also Testing the project and the chapter GPI in GRS.HLP

GRS

GRS is the abbreviation for "Galileo Runtime System". GRS stands for the GRSW and GRSW1 runtime programs of the MMI devices. These programs the interpret the data structure (code) generated by the GALILEO design software.

See also GRSGB.HLP

GRS.HLP

Start the GRS help system in the Help menu in order to obtain more details.

GRSW

Ist das Ablaufprogramm für Geräte ohne Flash-Karte (siehe auch unter GRS)

GRSW1

Ist das Ablaufprogramm für MMI Geräte mit Flash-Karte (siehe auch unter GRS)

INFO data block

Text that is displayed in the Error window for as long as the error bit is set.

These are not logged in the Error history.

Link

Link between the MMI and PLC. An MMI can have several links.

Mainboard Firmware

This is the operating system on the MMI. The Application Loader is part of the operating system.

Mask

A whole screen on the MMI that contains objects (e.g. bitmaps, operating elements, displays, function keys, ...)..

MDI

Multi Document Interface . A Windows application (GALILEO) allows several documents (masks) to be opened at the same time.

MMI

An operator panel on which the GRS is installed and which contains a communications card compatible with GALILEO.

Objects

Objects are static or dynamic objects.

Static objects are in the background and do not change during operation.

Dynamic objects are in the foreground of the mask and can change in appearance in the event of a data change.

PLC

The programmable controller or peripheral device that is connected to the MMI.

Polling

Cyclical reading of the PLC

WRITE data blocks

Data blocks that are only transferred from the MMI to the PLC.

Project

Combination of masks and their allocations that are loaded onto the MMI as one unit.

Project directory

Directory in which the last loaded project was located.

Runtime code

The complete project that is used by the GRS.

Source project

The project that was edited by GALILEO.

SRAM

A battery-backed memory on the MMI that prevents data from being lost in the event of a power failure.

Static objects

A drawing element (line, circle, rectangle, bitmap, ...) that is not changed (background picture) whilst the MMI is in operation.

Status block

The Status block together with the Control block are used for monitoring and indicating the status of communication between the MMI and the PLC.

See also Control block and GRSGB.HLP.

Tag

Tag name that represents a dynamic object in the PLC.

Toolbar

Toolbar in the design software for directly selecting functions. All buttons in a toolbar are also available as a menu point in the menu.

Touch Panel

An MMI with a touch-sensitive screen (Touch). It contains the GRS and a communications card that is compatible with GALILEO.

Touchzone

Any definable rectangular area on the MMI that responds to a touch operation.

WARNING block

Error text that is displayed in the Error window for as long as the error bit is set.

The following events are logged (with date and time) in the Error history:

- Occurrence of the error

- Disappearance of the error

Zones

Touch zones or display fields that are based on objects.