SIEMENS

easy starter for *instabus* EIB

Electrical Installation Technology

" *easy starter for instabus EIB*" manual, Siemens *instabus EIB*
Version 1.1, February 2000

Safety note

The program *easy starter for instabus EIB* has been developed as a quick introduction to the technology of *instabus EIB* and for this reason is only supplied with a limited number of functions and devices. It should therefore not be used in existing EIB systems that have been created using ETS.
Siemens AG assumes no legal responsibility or any other liability for any consequences that may result from using the program.

Foreword

Welcome to easy starter for instabus EIB

With *easy starter*, we aim to make your introduction to the European Installation Bus (EIB) and the EIB Tool Software (ETS) as easy as possible. Simple associations can be learnt and practised using products that are selected for lighting and shutter control applications. The software is simple to operate and can run on any PC. You do not need to attend a special ETS course beforehand. You will also find the ETS Demo light on this CD which enables you to practice using the professional EIB software. Projects that have been created with the *easy starter* can be extended with the aid of ETS to include the complete EIB product range. You will find instructions in this manual for transferring the data step by step.

The installation bus system instabus EIB

The need for greater convenience and more technical possibilities places increasing demands on electrical installations. Conventional electrical installations are pushed to their limit. With *instabus EIB*, these comprehensive requirements can be implemented both clearly and economically.

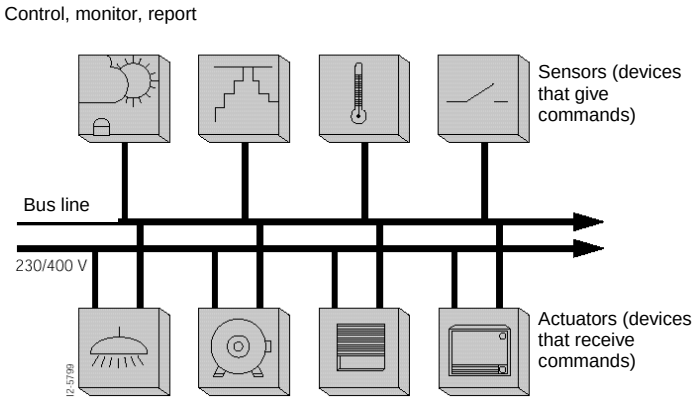
In conventional electrical installations, each function requires its own cable and each control system requires a separate power supply. In contrast, it is possible with *instabus EIB* to control, monitor and report all the technical functions and processes via a common cable.
Apart from saving cable, this results in further advantages:

- The installation in a building can be carried out extremely simply and can be extended and modified without any problems.
- On changes in usage or room structures, the *instabus EIB* system can be quickly and easily adapted by reassigning the bus devices, without the cables having to be laid again.

1 Technical description of instabus EIB

Transmission technology

The installation bus is a decentralised bus system and does not require a central controller. Each device has its own microprocessor. All the connected bus devices can exchange information via a common transmission path i.e. the bus. The information that is to be transmitted is packed into a telegram and sent via the bus from one sensor (devices that give commands, e.g. push button, motion detector) to one or several actuators (devices that receive commands, e.g. dimmer, load switch).
The transmission is not electrically isolated for *instabus EIB*, since the power supply (DC 24V) for the bus device is also transferred. The telegrams are *modulated* to this direct voltage.



Addressing

During project design, each bus device receives its own physical address by which it can be uniquely identified.
When the *instabus EIB* system is in operation, group addresses are used for message interchange. The devices that are to carry out a specific function together, are logically wired via group addresses. When configuring the *instabus EIB* system with *easy starter*, it is defined for each bus device which group address it should respond to. If a bus device listens to a telegram on the bus, it only receives the telegram if it is addressed by the group address that is contained within it (and the transmission was successful). Otherwise the device rejects the telegram since it was not the intended recipient.

Topology

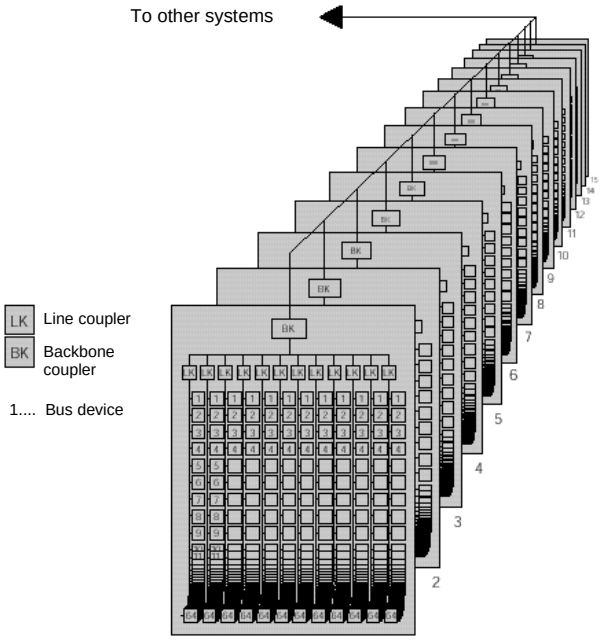
A maximum of 64 devices with bus capability (bus devices) can be connected to a line, the smallest unit of the *instabus EIB* system. Up to 12 lines can be combined into an area using line couplers which are connected to the main line. Using *easy starter* however it is only possible to configure one line i.e. only 64 devices can be inserted into your project. 15 areas can be combined into a larger unit via backbone couplers which are connected to the backbone line. The interfaces (gateways) to external systems (SICLIMAT X, ISDN etc.) or further *EIB* systems are connected to the backbone line. Although it is possible to combine over 12,000 bus devices in one unit, the clear logic of the system is maintained. When the system is in operation, the exchange of information does not become chaotic since telegrams only cross interfaces to other lines and functional areas if the devices are to be addressed via the group address. The line/backbone couplers thus carry out the necessary filter function.

The physical address is oriented to this topological structure: each device can be uniquely identified by its area, line and device number. The group addresses are divided into main and subgroups for assigning the bus devices to the technical functions.

During the project design, the group addresses can be divided into a maximum of 14 main groups for different functions e.g. for:

- lighting control
- shutter control
- room control for heating, air conditioning and ventilation

Each main group can contain up to 2048 subgroups, depending on the user's standpoint. The group addresses are assigned to the devices, independent of the physical address. Each bus device can therefore communicate with any other device.



Functional area 1

Technology

The individual bus devices on the line are supplied with one power supply using SELV (safety extra-low voltage) DC 24 V. It has both current and voltage limiters and is therefore short-circuit-proof. Any temporary disruptions of the supply system are bridged with a buffer time of 100 ms. The bus devices are ready for operation up to a minimum of DC 21 V and typically take 150 mW from the bus. When there is an additional power requirement in the application unit (e.g. LEDs), this increases up to 200 mW. If more than 30 devices need to be inserted over short line sections (e.g. in the distribution board), the power supply must be located in their vicinity. A maximum of 2 power supplies are permitted on a line. A minimum distance of 200 m (cable length) must be maintained between the two power supply units. If there is an increased power requirement, it is also possible to connect 2 power supply units in parallel to the *instabus EIB* via a common choke. The current permitted on the line is thereby increased to 500 mA. The cable length of the line including all the branches may not exceed 1000 m. The distance between a power supply and a bus device may not be greater than 350 m. To ensure that telegram collisions can be triggered, the distance between two bus devices is limited to a maximum of 700 m.

Installation

The installation is extremely simple. The bus cable can be laid parallel to the mains cable. It can be looped and branched. An EOL resistor is therefore not required. The devices are connected to the bus either via pressure contacts or bus terminals. When connecting via pressure contacts, the bus devices that are to be inserted in the distribution board are snapped onto the DIN rail DIN EN 50022-35x7.5 which has an adhesive data rail. The transition from the data rail to the bus cable is carried out via a connector. The connection of the bus cable to the devices for flush-mounted, surface-mounted, wall, ceiling or device installation is carried out by plugging in the bus terminal.

Bus devices

Each bus device consists principally of a universal **b**us **c**oupling **u**nit (BCU) and a function-related **a**pplication **u**nit (AU) that exchanges information with the BCU via the physical external interface (PEI). The BCU receives telegrams from the bus, decodes them and controls the AU. In return the AU supplies information to the BCU which is then coded and sent to the bus as a telegram. During project design and commissioning with *easy starter*, the BCU receives the data for the function that is to be executed. The BCU contains a **microp**rocessor (µP) for this purpose with a non-volatile memory ROM (**R**ead **O**nly **M**emory), a volatile memory RAM (**R**andom **A**ccess **M**emory) and a non-volatile, electrically erasable memory EEPROM (**E**lectrically **E**rasable **P**rogrammable ROM).
The ROM contains the system software that cannot be modified by the user. The data for the executable function of the BCU is stored by *easy starter* in the EEPROM. The current data of the µP is stored in the RAM.

2 Installation of easy starter for instabus EIB

This chapter describes the hardware and software requirements as well as the installation of *easy starter for instabus EIB.*

System requirements

Your computer must meet the following minimum requirements in order for you to be able to install and start using *easy starter for instabus EIB* (*easy starter*).

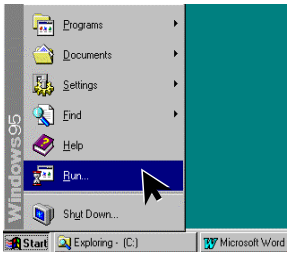
- IBM or 100 % compatible computer
- Microsoft Windows 95/98 with Internet Explorer 4.0 or Windows NT 4.0 * and higher with Internet Explorer 4.0
- CD-ROM drive
- Hard disk with at least 15 MB free disk space
- Mouse or other pointing device

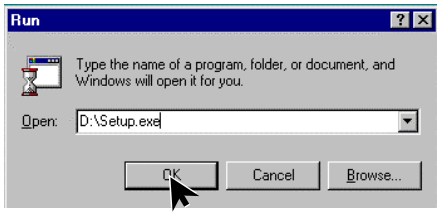
* It is not possible currently to connect to the bus using Windows NT.

Installing the software

The installation of *easy starter* is carried out as follows:

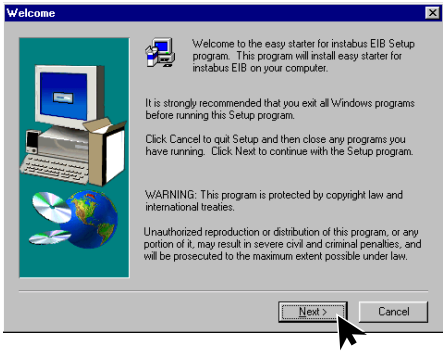
1. Insert the CD-ROM in your CD-ROM drive.
   Select *Run* from the Start menu.
   The *Run* dialog box is opened.

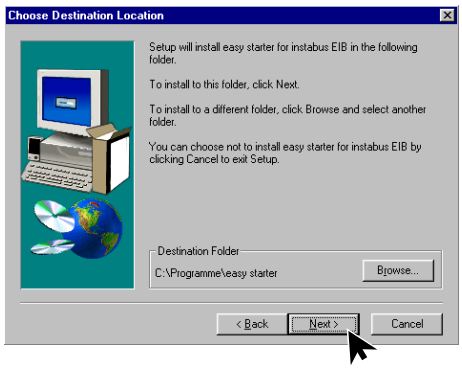




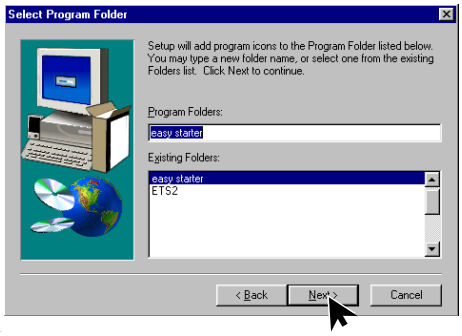
2. Enter the path for the installation program: [Drive]:\setup.exe and confirm with *OK* .

3. The Setup Assistant for the installation is initialised and the installation screen appears.

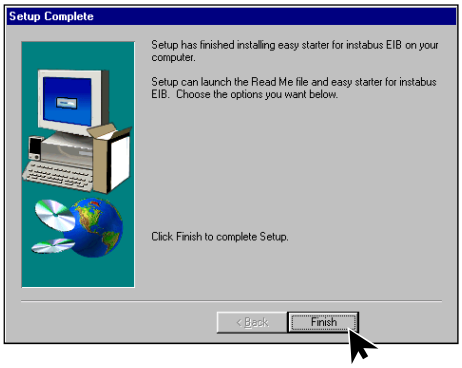




4. Enter the destination folder where you would like *easy starter* to be installed.
   The default is C:*Prpogram**easy starter* but you can select a different folder if required.
   Confirm the installation path by clicking on *Next*.



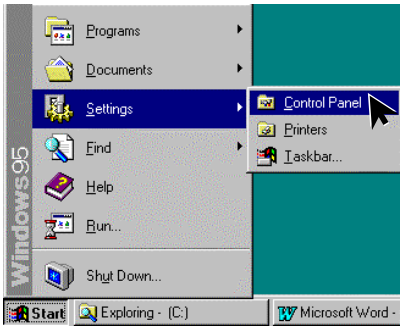
5. Now confirm which program group easy starter should be assigned to.
   The default is *easy starter*. You can however select any other program group.
   Click on *Next* to proceed with the installation.



6. *Easy starter* is now installed on your computer. The Setup Assistant copies the program files into the specified destination folder.

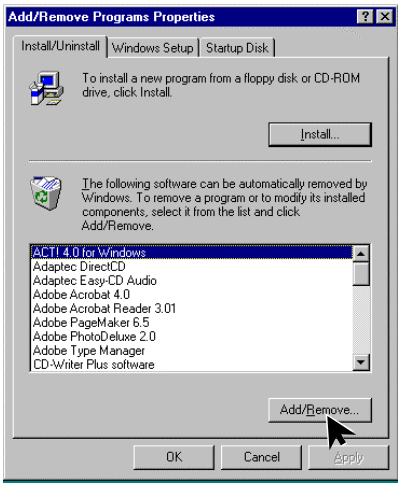
Uninstalling easy starter

If you wish to remove *easy starter*, you should use the following method to uninstall the program under Windows 95/98 and Windows NT 4.0.



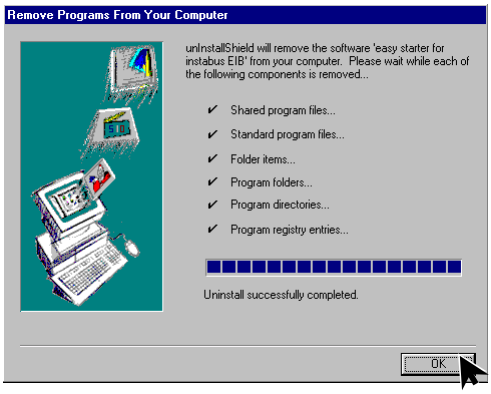
1. In the Windows *Start* menu, select the *Settings* option, followed by *Control Panel.*

2. The *Control panel* dialog appears on your screen. Double click on the option *Add/Remove Programs*.



3. In the dialog box, select the option *easy starter for instabus EIB* on the *Install/Uninstall* tab and confirm the selection by clicking on the *Add/Remove* button.

4. The Uninstall Shield is opened.
   The Assistant now removes all the *easy starter* files from your hard drive.
   Once the uninstall process has been successfully completed, confirm with *OK* and the program is removed from your computer.

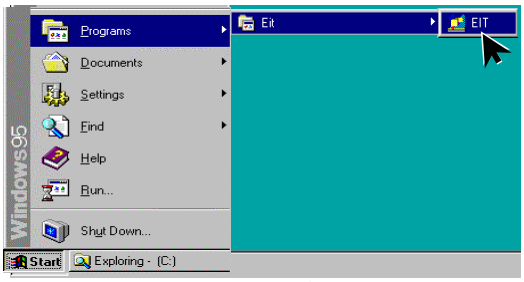


3 Fundamentals

In this chapter you will learn the basic steps for creating a project using *easy starter for instabus EIB* such as starting *easy starter*, the structure of the program window and using the menu commands. If you are already familiar with Windows programs, you will find *easy starter for instabus EIB"* simple to operate.

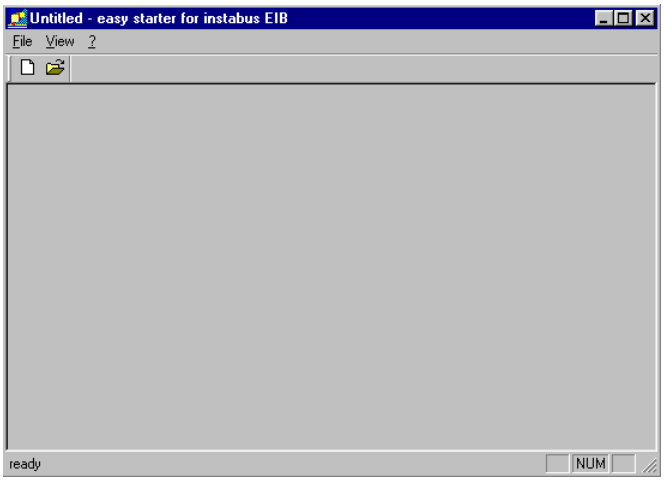
Starting Easy starter for instabus EIB

Once you have successfully installed the program, a link will appear under *Programs* in the *Start* menu which you select in order to start *easy starter*.



1. Position the mouse pointer on the program icon.
2. Double click on the icon with the left mouse button.

The *Start* window of *easy starter* appears on your screen.



As you can see, the menu bar only contains three menu items:
File, *View* and *Help* (?) with the following submenus:

File	New	You can create a project with this command.
	Open	This menu item enables you to open a project that you have already created.
	Printer settings	When this menu item is selected, the *Printer settings* dialog appears where you can select and configure a printer.
	Exit	You can exit *easy starter* with this command.
View		You can insert or remove the status line or toolbar with this menu item.
Help		When this menu item is selected, the Info Box about *easy starter for instabus EIB* is displayed.

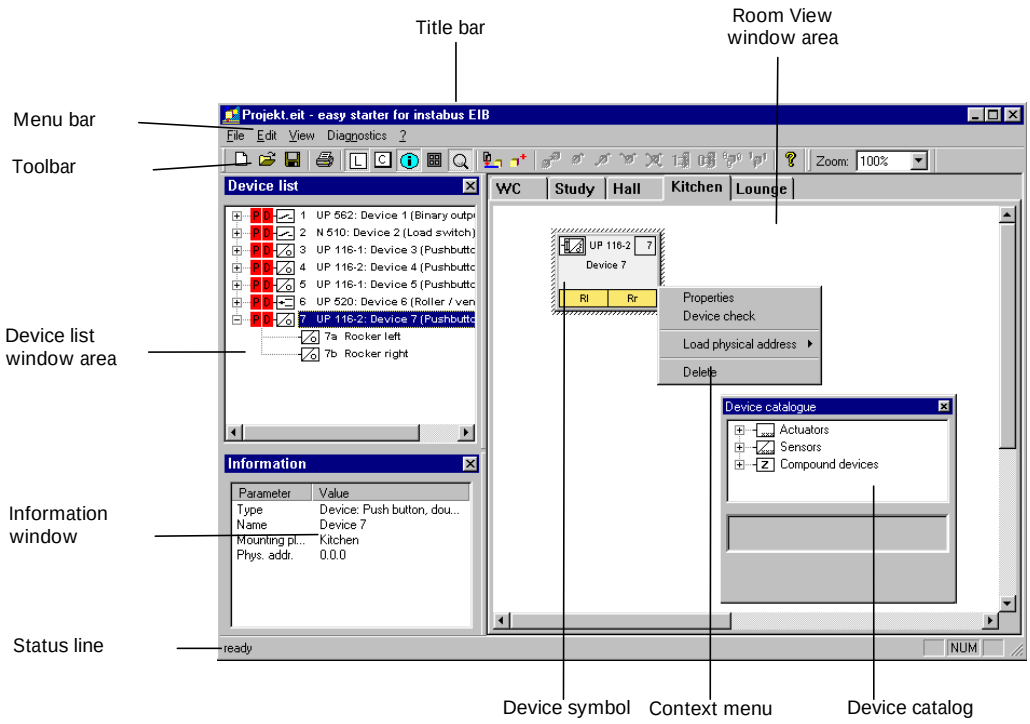
If you now call up a new project using the menu item *New* or click on the symbol depicted on the left (button) the *Start* window of *easy starter* changes into a *Project Design* window.

The Project Design window of easy starter

The Project Design window represents your workspace. It contains all the necessary tools to create a project with *easy starter for instabus EIB*, modify it or put it into operation.

The Project Design window consists of various sections. The top section resembles that of other Windows applications. It has a title bar, menu bar and toolbar. The main area of the window contains the project design area on the right, the so-called Room View, while the left-hand side contains the device list and information window. At the bottom is the status line which provides information about the current program operations as well as contextual data.

The following diagram shows the most important elements of the Project Design window.



Title bar

The title bar contains the program icon as well as the standard Windows icons for closing, minimising and maximising the window. It also indicates the name of the project that is currently open. If you have created a new project but have not saved it yet, the project is designated “Unnamed”.

Minimise: Reduces the window to an icon on the Windows task bar.

Magnify: Enlarges the window to fill the available screen (full screen).

Restore: Restores the window to the size previously defined by the user.

Close: Closes the window and the program.

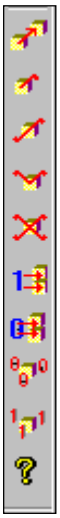
Menu bar

The menu bar gives you access to the commands of *easy starter* via the respective menu title. Each menu combines a row of related commands into a small unit that is assigned to a particular purpose or program property. To open the menu, click with the mouse on the menu text or press the Alt key followed by the underlined letter. The menu field is opened and you can select one of the available commands.

Toolbar

The toolbar consists of a number of icons that can be individually selected. You can use these icons to carry out the most frequently used commands directly without using the respective menus. If a command is not available, the corresponding symbol is greyed out. Buttons can be added or removed and the toolbar can be hidden or displayed.

New
Open
Save
Print
Device list
Device catalog
Zoom
Information window
Total project window
Download
Incorporate device

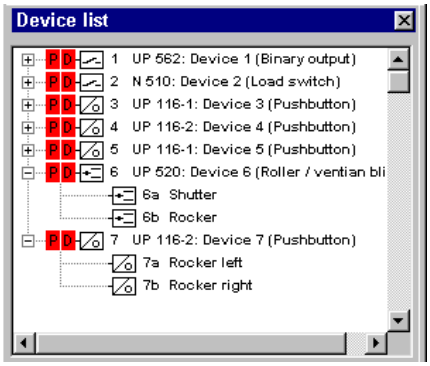


Free connection
On-off circuit
Two-way circuit
Series connection
Cross connection
Group circuit On
Group circuit Off
Central Off
Panic circuit
Help

Status line

The status line at the bottom of the window serves to display the execution of an lengthy operation or the current status of an operation (e.g. when saving or printing a project). It also indicates which step you should carry out next when you are executing an operation in several parts (e.g. when linking devices). You can hide or display the status line in parallel with the toolbar.

Device list



This list outlines all the devices that are contained in the current project. The device list can be created during project design or imported. When a project is recalled, the device list is displayed on the left-hand side of the screen. However it can also be displayed in its own window and moved to any position in the Project Design window. You can also hide or display the list via the *View* menu as well as via the button depicted on the left.
Each entry in the list corresponds to a device, whereby the following structure is used:

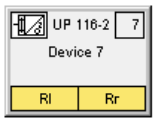
<Status display> <Symbol> <Consecutive number> <Type> <Name> <Installation site>

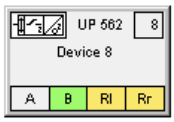
Each device has a particular number of channels which are listed as subgroups. Each of these subgroups consists of the following:

<Symbol> <Consecutive number and letter> <Name of the channel>

If a functional area has been assigned to a channel, the complete list entry of this channel is displayed in bold type. The colour of the status display for the device indicates whether the device has already been given a physical address (P, green) or not (P, red) and whether the device has already been downloaded (D, green) or not (D, rot).

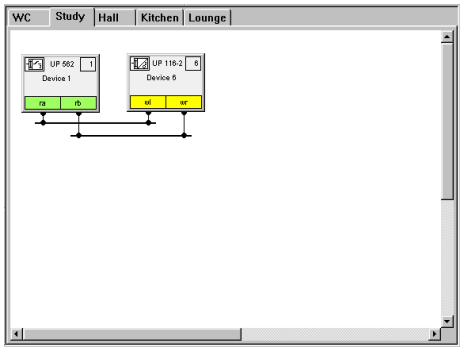
Device symbol

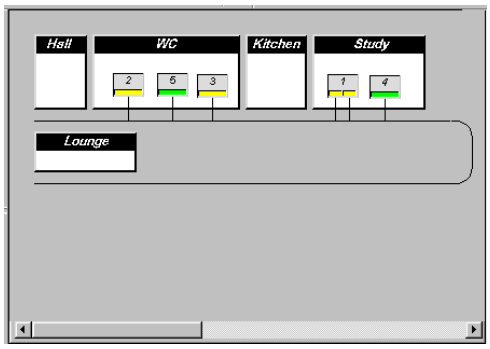




Each device is represented in the Room View by a device symbol. You can move this symbol as required in the Room View. At the top, the switching symbol is in the left-hand corner, the device type is located in the centre while the consecutive device number is displayed in the right-hand corner. The device name is located in the middle of the symbol. The channels are displayed at the bottom. A distinction is made for the channels between inputs (yellow) and outputs (green). A device is always displayed with all the channels whereby the channels that do not have a functional area or have another functional area are coloured grey.

Room View



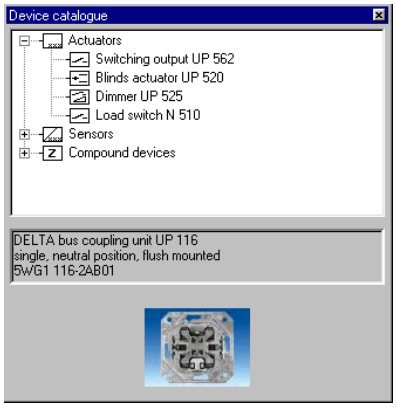


The Room View is at the centre of the program where you can insert devices or link them with each other. The Room View is displayed on the right-hand side of the screen by calling up a project. You can choose two different types of display for this view.

In the normal room depiction, all the rooms are listed individually as index cards one after the other. The second type of display is a multi room display which is called the total project window. You can hide or display the total project window with the button depicted on the left. The individual buses are combined and represented as a single bus.

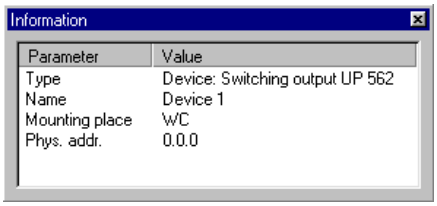
The rooms are displayed next to each other with a header that contains the name of the room. The total project window is only used for display whereby the display of the individual links functions in the same way as in the normal room depiction. The order of the rooms is produced from the order (of index cards) in the standard display.

Device catalogue



The available device types are listed in the device catalogue. The devices that are required for the project are taken from the device catalogue and placed in the rooms or in the device list using drag & drop. The catalogue is displayed in its own window and can be moved to any position in the Project Design window. You can hide or display the catalogue via the *View* menu as well as via the button depicted on the left.
The catalogue is subdivided into "Actuators", "Sensors" and "Combound devices". If a particular device is selected, information about the device including a small photograph is displayed in the bottom section of the catalogue. The device catalogue makes it possible to create and configure a project "offline". This means that the devices do not need to be physically present at this point in time.

Information window



The information window displays all the properties of the device or the channel that is currently selected by the mouse pointer. As in the status line, it also indicates which step you should carry out next when you are executing an operation in several parts (e.g. when linking devices).
The window is displayed on the bottom left-hand side of the screen. It can however also be displayed in its own window and moved to any position in the Project Design window. You can also hide or display it via the *View* menu as well as via the button depicted on the left.

Overview of commands

The individual menu items are listed and explained at the back of the manual.
You can refer to this section at any time for an overview. The individual commands are explained when they are used in the next chapter "Project Design". The status line also gives a brief description of the menu items using key words. As soon as you select or mark a menu item, the relevant information appears in this line as a message.

Help menu

With the online help system, you can quickly call up information about using the menu commands and functions of *easy starter* while you are working. The *Help* menu can be accessed via the menu item in the menu bar or by pressing the function key F1.

Quick tip

If you require information about the name of a button, simply position the mouse pointer above the button. A field opens containing the name of the button. A brief description of its function also appears in the status line.

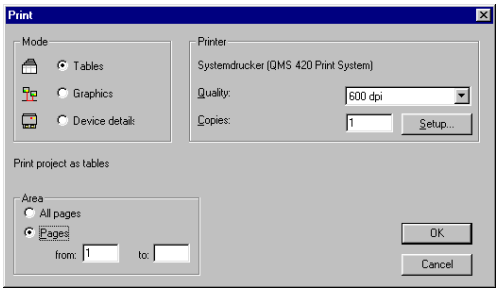
Printing project documentation

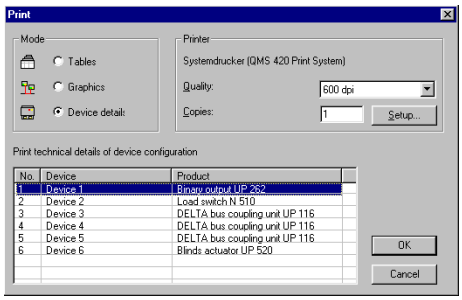
Documentation for the current project can be output to a printer.
There are three ways of printing the project documentation:

- via the *Print* command in the *File* menu
- via the symbol (depicted on the left) in the toolbar
- or via the *Print* button in *Print Preview* dialog.

Once you have selected one of these three options, the *Print* dialog window opens.

Print

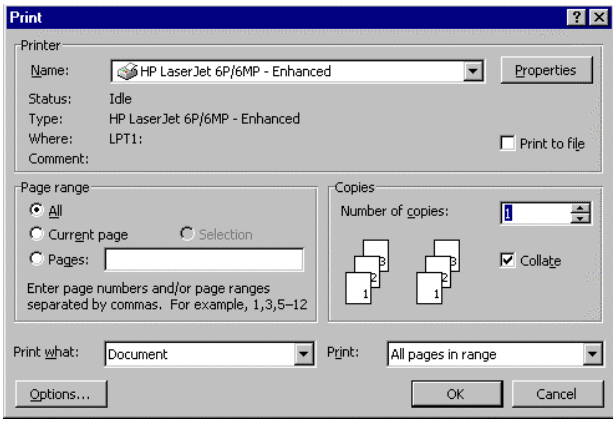




In this dialog window, you can define the format, print quality and print range of the printed output.
You can specify whether the information is displayed in the form of a table, a graphic or as device-specific data (see *Print Preview*).
When the information appears as a table, the individual devices are displayed with their properties (installation site, functional area, etc.) in the form of a list. When the information is displayed graphically, the individual rooms are displayed as in the Room View.
When the device-specific output is selected, you can choose a device and the ETS data is also printed.

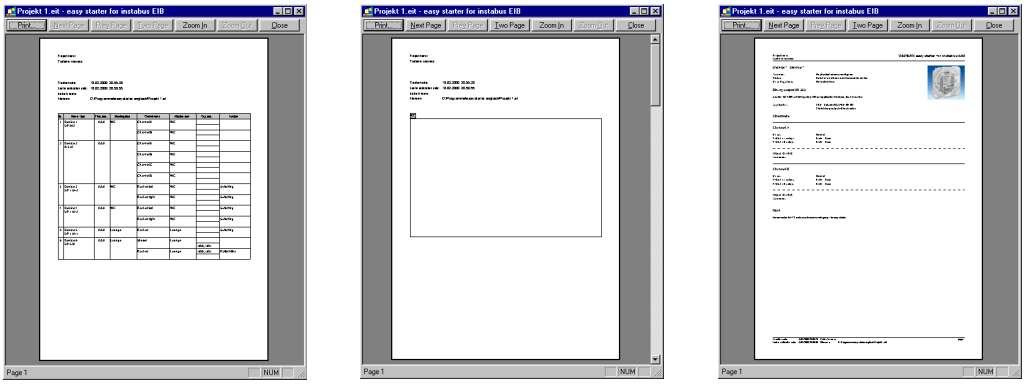
The standard Windows printer can be used for printing. Should you wish to use a different printer, you can select and configure a printer by clicking on the *Setup* button.
If you have any queries regarding the printer settings, please refer to your Windows or printer manual.

Printer settings



The *Printer settings* dialog appears when this menu item is selected.
This dialog allows you to select and configure a printer as well as set the required paper format.

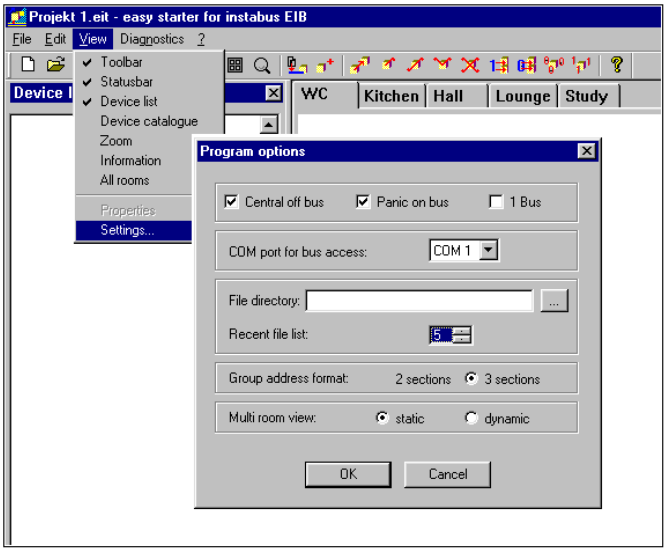
Print Preview



This option enables you to preview the layout of the printed output.
As with the *Print* menu, you can select one of the three viewing formats.
In the *Print Preview* window, you can use the commands in the header to browse through the document, enlarge it and print it out.

Setting the program properties

The *Settings* menu enables you to carry out the general settings for the program. In many cases, *easy starter* must be restarted for these settings to come into effect.



1 Bus: This setting enables you to select the way that the bus is displayed in the Room View. When this option is deactivated, the links are represented as individual buses. Links that cross rooms are indicated with a room tag on the left or right side of the window.
When this option is selected, the individual buses are combined and represented as a single bus at the bottom of the window. The room tags are greyed out.

Central Off Bus / Panic On Bus: The “Central Off” and “Panic On” circuits are each displayed in the Room View for a multi-bus display as a separate bus. When this option is deactivated, these links are no longer visible.

Serial interface for bus access: In this field you can set the serial PC interface which you wish to use for the connection to the bus. To change the setting, click on the right arrow next to the input field and select a connection.

File directory: You can define a specific target directory for saving and opening projects. When the dialog fields *Open* and *Save as* are enabled after starting the program, the folder that is selected here is displayed as the default working directory.

Recent file list: You can set here how many last opened projects should be displayed in the *File* menu. The number of list entries is not automatically extended after the restart. If your old list only contained four files, the new list which can contain a maximum of 8 files will still only display your old entries until you have opened another 4 files.

Group address format: This setting allows you to specify how the group addresses are displayed in the project documentation. Click on a check box in order to switch between the default setting of 2-level group addresses and the clearer 3-level display.

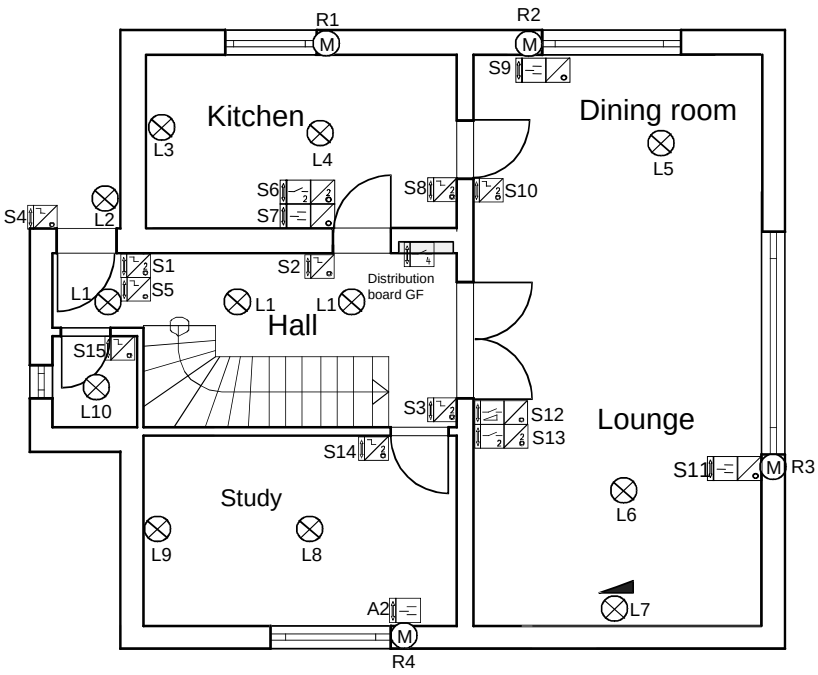
Multi room view:
static: When switching from the normal Room View to the multi-room display, the device list is hidden in this setting. The information window changes into a window that can be moved to any position.
dynamic: In this setting, only the viewing mode in the right-hand side of the window is changed. The information window and the device list retain their normal appearance.

4 Project Design

In the following chapter you will learn how simple it is to create a project with *easy starter for instabus EIB*. The chapter is structured step by step and you will learn how to design a detached house using *easy starter for instabus EIB*.

The project

The ground floor of a detached house should be configured quickly and easily with the *easy starter* and the functions should be checked. To start with, only the ground floor is to be fitted with the installation bus system *instabus EIB*.
The following installation plan as well as the assignment list serve as an example for project design.



Overview of required devices

	Sensors	Actuators	Combined devices
WC	S15 1-fold push button UP 116		
Study	S14 2-fold push button UP 116	A1 Shutter switch UP 520	
Hall	S1 2-fold push button UP 116 S2 1-fold push button UP 116 S3 1-fold push button UP 116 S4 1-fold push button UP 116 S5 1-fold push button UP 116	A1 Load switch N 510	
Kitchen	S8 1-fold push button UP 116		S6 Switch output + 2-fold push button UP 562 S7 Shutter switch + 1-fold push button UP 520
Lounge	S10 2-fold push button UP 116 S13 2-fold push button UP 116		S9 Shutter switch + 1-fold push button UP 520 S11 Shutter switch + 1-fold push button UP 520 S12 Dimmer + 1-fold push button UP 525 S13 Switch output + 1-fold push button UP 562
Entry	S4 1-fold push button UP 116		

Assignment of functions

The light in the WC is switched using push button S15. Channel C of the load switch N 510 in the distribution board on the ground floor should be used as a switch actuator for lamp L10.

In the study, lamps L9 and L8 (A1 load switch, channel D) are switched with the right rocker of S14. The left rocker of S14 controls the shutter switch A2, which is used to raise and lower the roller blind R4.

It should be possible to switch the three luminaires L1 (A1 load switch, channel A) in the hall from three locations (using the right rocker of S1 as well as push buttons S2 and S3). The outside light (A1 load switch, channel B with 5 minute timer function) is switched with the left rocker of S1 and push button S4 (input). The left rocker of push button S5 has a "Panic On" function while the right rocker is used for "Central Off" so that all the luminaires can be switched on or off.

In the kitchen, roller blind R1 should be controlled by push button S7. Lamp L3 should be switched with the left rockers of push button S6 (combined device) and S8 with a two-way circuit. In the same way, lamp L4 should be switched using the right rockers of the push button.

In the lounge, it should be possible to switch the lamp L6 using the right rocker of S13 and the left rocker of S10. The indirect lighting L7 should be switched and dimmed using push button S12 and the right rocker of S10. It should be possible to switch the lamp L5 using the left rocker of S13 and the left rocker of S10.

The two roller blinds R2 and R3 are each controlled with a single push button at the window. The combined device UP 562 is used as a switch actuator for lamps L6 and L5.

Creating a project

Creating a new project

Start the program as described in Chapter 3.
Click on *File* in the menu bar and select the command *New* or click on the button (depicted on the left) in the toolbar.

Note: When you create a new project, any projects that are already open are closed. You can only ever have one project open at a time.

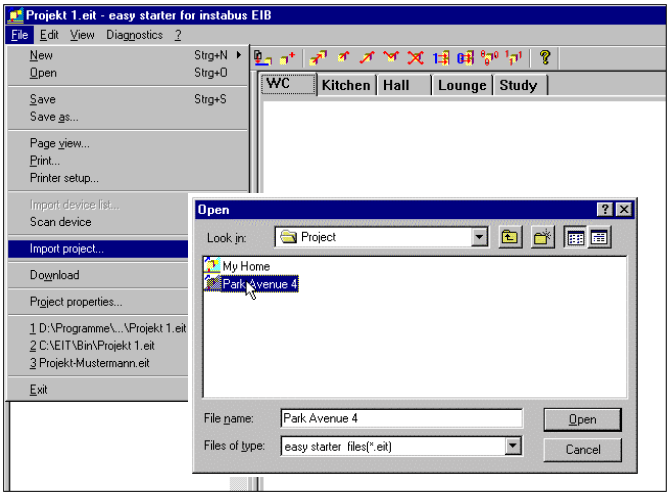
Opening a project

You open an existing project by selecting the command *Open* in the *File* menu or by clicking on the button (depicted on the left) in the toolbar.
The *Open* dialog window is displayed where you can select the project.
In the *Look in* drop-down field you can select the folder where the project is located. You can then enter the project name in the *File name* text field or click on the project. The project is opened by selecting the *Open* button or by double clicking on the project itself.

Note: When you create a new project, any projects that are already open are closed. You can only ever have one project open at a time.

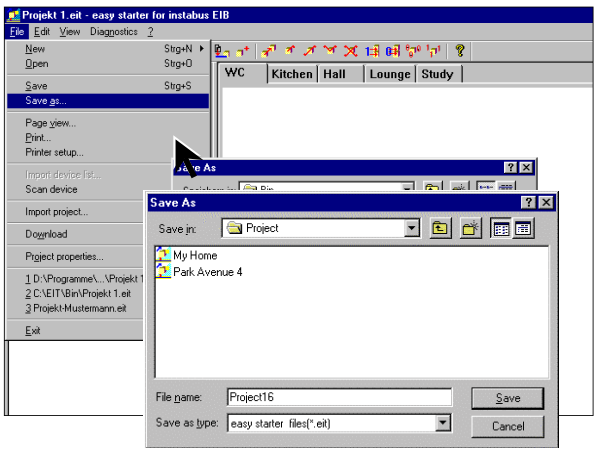
Importing a partial project

You can insert existing partial projects in your current project. This enables you to incorporate room designs in your project that have already been created (e.g. sample rooms with standard components). During the insertion, all the rooms, devices and links are also transferred. If there are "Panic On" and "Central Off" circuits in the current and imported project, these are combined.
Click on *Import partial project* in the *File* menu.
The dialog window *Open* appears for selecting the project.
In the drop-down list box *Look in*, you can select the folder where the project is located. Then enter the project name in the text field *File name* or click on the project required. The project is inserted by clicking on the *Open* button or double clicking on the selected project.



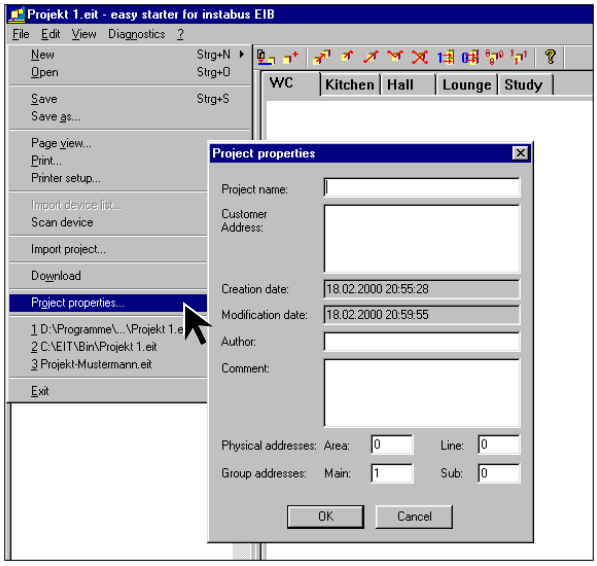
Saving a project

When you a create a project, you should save it initially and then after that at regular intervals. You can save the current project regardless of whether it is a new or existing project. If you only want to store the project temporarily, you can also click on the button depicted on the left or select the command *Save* in the *File* menu. You can also save a copy of the project under another name or in another location.
Select the option *Save as* in the *File* menu. Only this command is available in newly created projects. After clicking on the command, the dialog window *Save as* opens which enables you to select the memory location and to assign a project name. In the drop-down list box, you can select the folder where you wish to save the project in. You should then enter the name of the project in the text field *File name*. You do not need to enter the file extension .eit since this is automatically generated when entering a new project name. By clicking on the button *Save*, your project is stored in the specified directory.



Defining the properties of the project

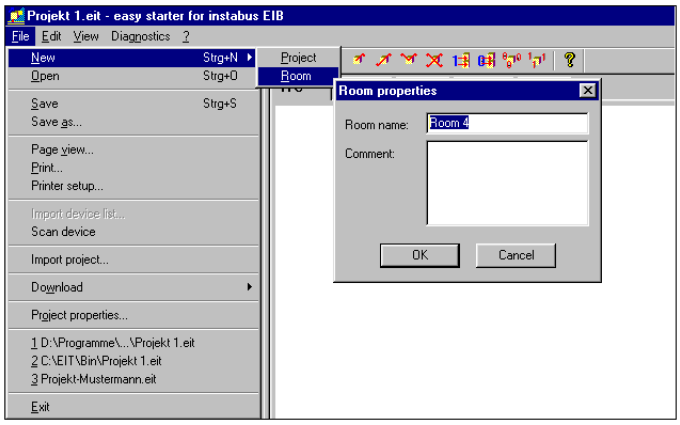
Using the menu item *Project properties*, you can assign specific project data which will also be printed out later with the project documentation.
To do this, click on the *Project properties* command in the *File* menu.
The following dialog window appears:



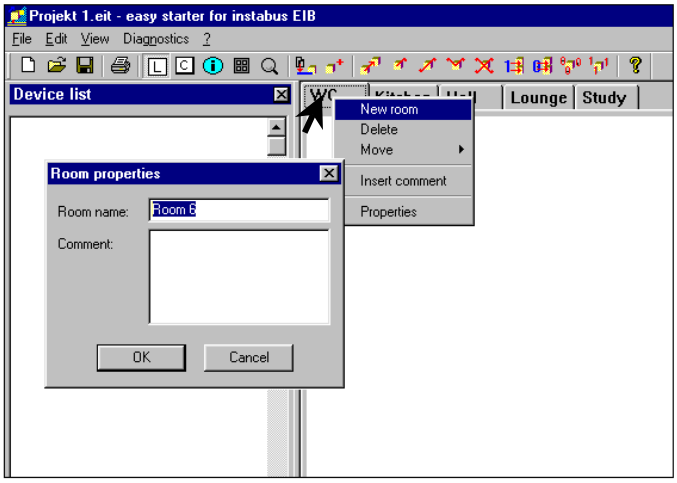
The data about the physical addresses and group addresses is not significant at this stage. The default values can be retained. Should the project be transferred to ETS at a later date, these values must be modified accordingly.

Inserting rooms

As a next step, you can insert an index card in the Room View for each room in your project. These rooms are the functional areas of the device channels in your project (in the sample project: Lounge, Kitchen, WC, Hall, Study).
To insert a room, select *New* from the *File* menu and then click on the option *Room*. If you point with the mouse to a room that already exists, a context menu opens after a right mouse click. It is also possible to insert new rooms using the commmand *New room*.
The *Room properties* dialog opens where you can assign a name to the room as well as insert a comment.

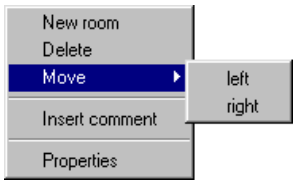


Inserting a new room via the menu bar



Inserting a new room via the context menu

The context menu contains all the commands that you require for editing a room.
These commands are as follows:



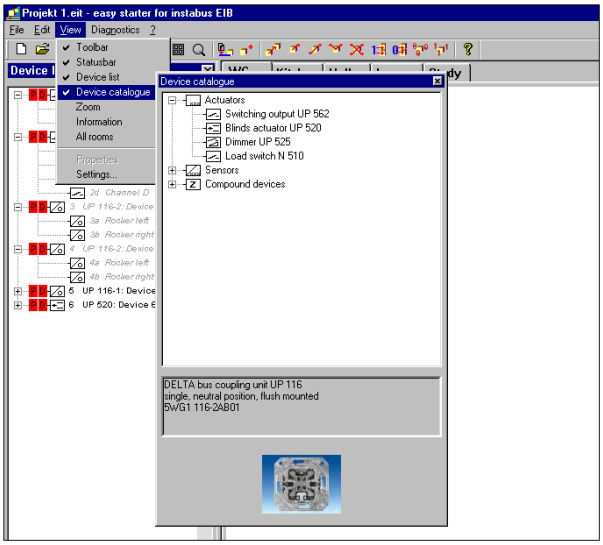
New room:	Inserts a new room into the project.
Delete:	Deletes the selected room from the project.
Move:	This command makes it possible to move the rooms to the left or right within the Room View.
Insert comment:	Inserts a comment field in the room. You can also call up this command if you press the right mouse button in the room.
Properties:	Opens the *Properties* window of the room.

Inserting devices

Once you have created the rooms, the devices are inserted. The assignment list in the example indicates the devices that are required.
You can insert devices into your project using the device catalog or by incorporating devices directly from the bus. The device catalog makes it possible to create and configure a project "offline". This means that the devices do not need to be physically present.
If you would like to incorporate a device from the bus, your PC must be connected to an existing *instabus EIB* system. If this option is selected, a device that actually exists on the bus is detected and incorporated into the device list. This function is very useful if you wish to incorporate in your project any devices that have already been installed.

Inserting devices using the device catalogue

You can open the device catalog by clicking on the menu item *Device catalogue* in the *View* menu or by clicking on the button (depicted on the left) in the toolbar.
All the devices that are available in *easy starter* are listed in the device catalog.



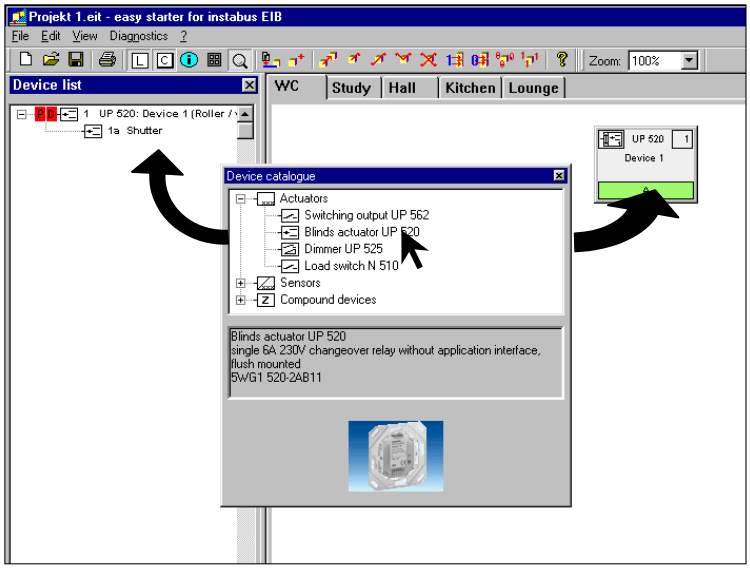
The catalogue is subdivided into three groups:

- Actuators
- Sensors
- Combined devices

If only the group names are visible in the catalogue, double click on one of the names and the devices contained within the group are displayed.
If you select a device, a brief description as well as a small photograph are displayed in the bottom section of the catalog.

Selecting and inserting devices

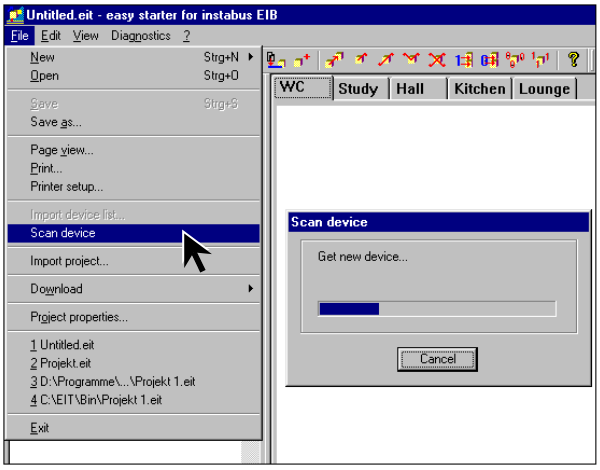
Select the required device in the catalog and place it in the room using drag & drop. By placing the device in the current room, this room is automatically assigned as a functional area for each channel of the device. When sensors are used, this room is also defined as an installation site.



The devices can also be inserted directly in the device list. The definition of the functional area of the individual channels and the installation site of the device can then be carried out in the properties field of the respective device. If you have inserted sensors directly in the device list, you can only assign an installation site to the device by dragging it from the device list into the corresponding room.

Incorporating devices from the bus

If you are connected to an existing bus line (online), you can insert devices into your project via the menu item *scan device*. A device that is actually present on the bus is detected and incorporated in the device list. To do this, the programming button of this device must be pressed. This function is very useful if you wish to incorporate in your project any devices that have already been installed.

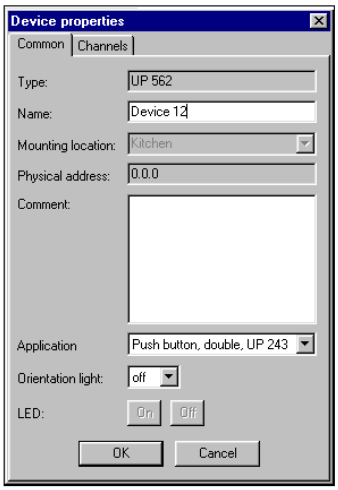


Defining the properties of the device

Each time a device is inserted, a dialog window appears where you can define the properties of the device. This dialog window can also be called up via the context menu of a device.

Editing device properties

The dialog window *Device properties* consists of two index cards. On the *Common* page you can assign general data to the device as well as carry out settings that are dependent on the device type. All the data that is entered here is also contained in the printout of the project documentation.



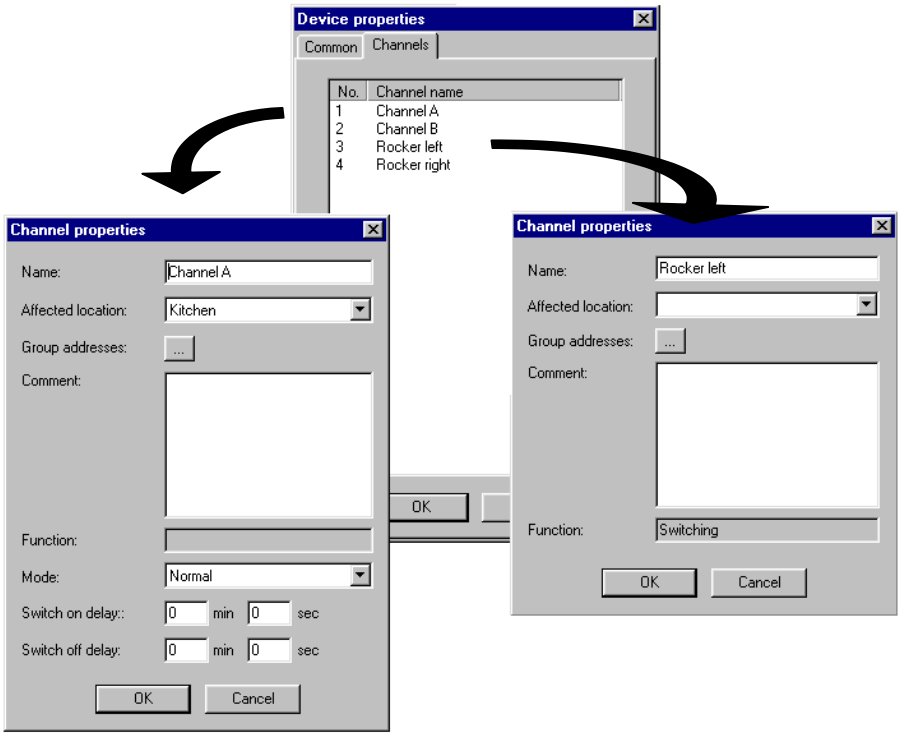
Type:	The device type is entered here.
Name:	A name can be assigned to the device in this option. You can either accept the suggested name or enter your own name. Each device name must be unique i.e. a name cannot be entered twice in the project.
Mounting location:	You can enter the installation site of the device here. Click on the arrow to the right of the entry field in order to select one of the existing rooms or enter it directly in the entry field. The installation site cannot however always be freely selected. The installation site is determined for many devices by the functional area of its channels.
Physical address:	The physical address of the device is recorded here. It is automatically assigned when loading the address of the program and cannot be changed.
Comment:	Data or remarks can be entered here. The comment is not printed.
Orientation light:	You can switch the programming LED on or off via these two buttons in order to display a device for example.

You can also set the type of contacts used for the push button interface UP 220. The push button attachment (PEI attachment) for the combined devices can also be changed at a later date and the function of the orientation light is defined. If you change these settings, all the existing links and assigned functional areas and installation sites are deleted. The device is also deleted from the Room View and is only available in the device list.

Your entries are saved by clicking on the *OK* button and the dialog window is closed. If you now drag the mouse pointer over the device, you can also see the information displayed in the information window in the bottom left-hand corner.

Editing the properties of the channel

The individual channels are displayed on the *Channels* page. You can open the *Channel properties* dialog by double clicking on one of the channel names or via the context menu. In the dialog window, you can assign general data to the channel as in the *Device propeties* dialog as well as carry out type-specific settings.
All the data that is entered here is also contained in the printout of the project documentation.



Name:	The name of the channel can be changed here. You can either accept the suggested name or enter your own name.
Affected location:	The functional area of the channel can be entered here. Click on the arrow to the right of the entry field in order to select one of the existing rooms or enter it directly in the entry field.

Group addresses: The group addresses are displayed by clicking on the button. Group addresses are automatically assigned by linking. They are later loaded into the device. It is also defined for each channel whether it is a sensor (sends a group address) or an actuator (receives group addresses).

Comment: You can enter data or remarks here.
The comments are not printed.

Function: The function is automatically entered in this field, which you assign to the channel by linking (e.g. "Panic Off").

You can also set these properties for the switching devices UP 562 and N 510.

Mode: You can define the operation mode of the channel.
Normal mode: You can set an On and Off delay in this operating mode. Pressing the On button starts a timer. Once the set period has elapsed, the load switches a light on for example. If the push button is pressed again during the operating time, the timer restarts. The Off delay functions in parallel to the On delay.
Timer: You can use the channel for example as a staircase lighting switch in this mode. When the push button is pressed, a timer starts and switches the lamp on without a delay. Once the set time has elapsed, the lamp is switched off. Each further operation of the push button restarts the timer. The lamp can be switched off at any time via an Off button.

Linking devices

Once you have placed all the devices in the rooms and assigned the properties, the functional part of the project, such as the linking of the channels, can be carried out. Channels can be linked using the Assistant or freely by the user. The group addresses are automatically assigned by linking. These addresses are loaded in the devices.

The Connections Assistant

You can link the channels based on standard connections such as a two-way circuit or series connection. The Assistant helps you by describing the next step in the status line and displaying unauthorised actions or connection attempts with a sign.
There are three ways of starting the Assistant.
If you have not selected a device or channel, you can call up all the circuit types via the *Edit* menu or button. The Assistant indicates the first channel to be selected according to the selected circuit type.
The third option is to call up the Assistant via the context menu of a channel in the Room View. The context menu only displays the types of connection that can be implemented with this channel.

The available connection types

In the following overview, you can see the available circuit types that the Assistant displays with the associated buttons in the toolbar.

	Type of circuit	Channels
	Control-off circuit:	1 actuator channel, 1 sensor channel,
	Two-way circuit:	1 actuator channel, 2 sensor channels,
	Series circuit:	2 actuator channels, 1 x 2-fold push button,
	Intermediate switch circuit:	1 actuator channel, n sensor channels,
	Group control On:	1 sensor channel, n actuator channels, (the sensor always switches ON)
	Group control Off:	1 sensor channel, n actuator channels, (the sensor always switches OFF)
	Central Off:	1 sensor channel, n actuator channels (the sensor always switches OFF and cannot be used for other connections. Fixed group address)
	Panic:	1 sensor channel, n actuator channels (the sensor always switches ON and cannot be used for other connections. Fixed group address)
	Free connection:	1 sensor channel, 1 actuator channel

When creating links using the Assistant, you should always start with the first named channel. You can exit the Assistant using the ESC key or by clicking in an empty space. You can use the command *Undo* in the *Edit* menu to delete the last created link.

Linking using the Assistant

When you are using the Assistant for the Control off circuit, two-way circuit and intermediate switch circuit, you must first choose a channel which you want to switch. Then select the sensors according to the circuit type (1 sensor for the Control off circuit, 2 sensors for the two-way circuit and an unlimited number of sensors for the intermediate switch circuit). The connection is then established.

For the series connection, the first step is likewise to select a channel. You then specify the second actuator which should be switched in series and then the sensor which must be a 2-fold push button.

The two special circuits “Central Off” (CO) and “Panic ” (PO) are circuits that can only be implemented using bus technology and they therefore take priority over other circuits. First of all select the sensor channel for switching and then all the actuator channels which should be included in the circuit. As a special case, these circuits are represented as buses for the sake of clarity (CO = blue, PO = green), as a large number of actuator channels in a project are generally involved in these circuits.

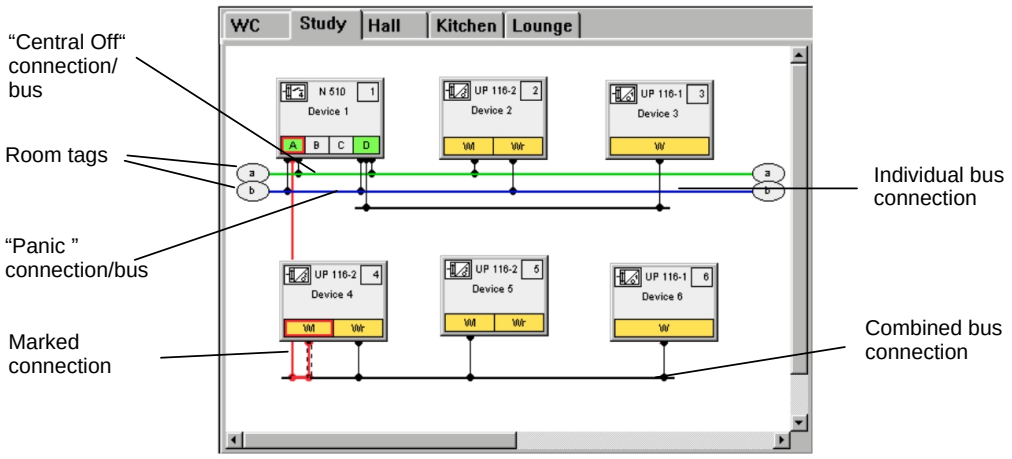
“Group circuit On” and “Group circuit Off“ are similar to these central circuits. You can form as many groups of actuator channels as required for these circuits which should then switched on or off together. First select the sensor channel which should switch the group on or off and then all the actuator channels which should be included in the group circuit.

The “Free connection” option enables you to create links between actuator and sensor channels. You can therefore extend any existing interconnections, produce asymmetrical solutions or introduce all the connections.
You can use this function as an alternative to the Assistant.

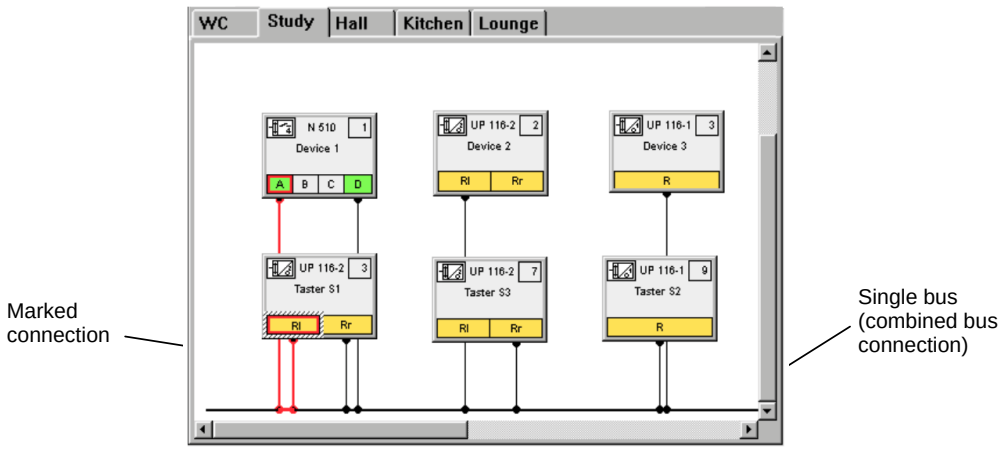
Displaying the links

The links are represented as buses. According to the program settings, the buses are displayed in the Room View as single bus or multi-bus. In the multi-bus display, the program checks when a new link is created as to whether one of the two channels involved is connected to a bus. If this is the case, this new link is displayed with the bus. If neither of the two channels is connected to an existing bus, a new one is generated. If you are linking two channels which belong to different buses, these two buses are merged. If this type of connection is separated, two buses appear again.

The various display modes for the links are shown in the picture below:



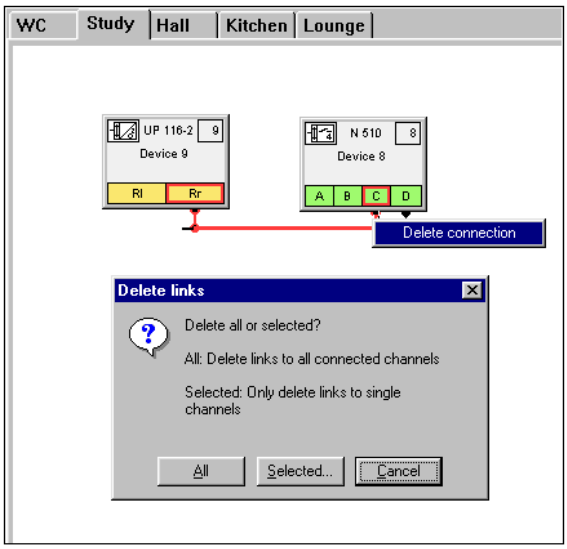
In the single bus display, the links are combined and represented with a bus at the bottom of the room display. You can define the type of display under *Settings* in the *View* menu.



When there are links across rooms, the bus is led to the edge of a room and marked with a room tag. The bus in the target room is extended with the same tag. A mouse click on the room tag of this type of bus changes to the corresponding room. This supersedes the usual order of the rooms.
The display of the bus leads to only one connection line coming from each sensor or actuator. If you select the line between the sensor and the bus with the mouse, this highlights all the connections to the actuator channels which this sensor channel can switch. When a line between an actuator channel and the bus is selected, all the links to the sensors are displayed which this actuator channel can switch.

Deleting links

You can delete the links of a channel via the menu item *Delete* in the *Edit* menu or via the context menu of the link. You then have the choice of deleting individual links or all the links. If you only want to delete individual links, the Assistant helps you by selecting with the mouse pointer the channels that need to be separated. By clicking on the *All* button, all the links for this channel are deleted.



Transfer into ETS 2.0

The project that has been created using *easy starter for instabus EIB* cannot be directly transferred into ETS2.
With the *Print* command, you can however print out the project parameter of the individual devices which you can use to parameterise the devices in ETS2.
The printout contains the following information for each inserted device:

- The application program used
- The corresponding objects
- The group addresses
- The physical addresses
- The functions/operating modes of the individual device channels
- The functions of the individual device rockers

5 Function test

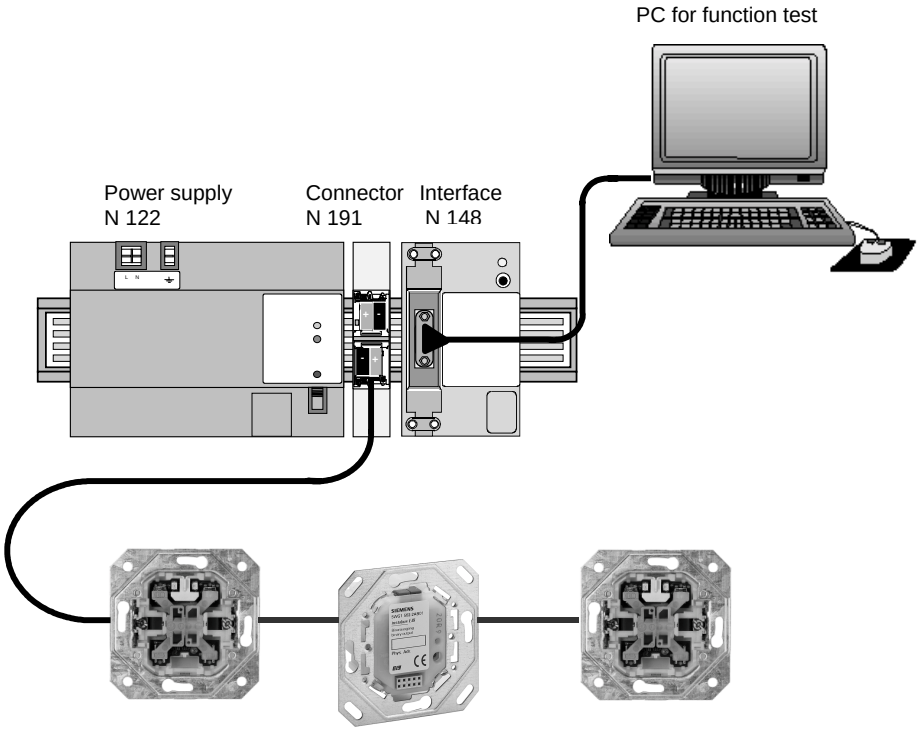
To be able to carry out an online function test, the project must first be loaded into the devices of the installed bus system.
The project is normally loaded in two stages:

- physical addresses are loaded into the devices
- functions are loaded into the devices (download)

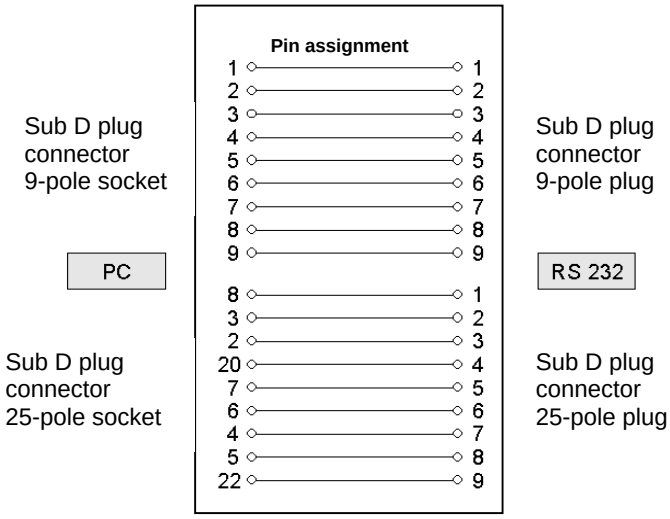
The loading does not rigidly follow the order above but depends on whether the project has been newly created, the functions have been modified or the devices have been inserted or removed. There are therefore various options available which enable you to load individual devices or the complete project.
Once the physical addresses have been loaded and the download has been completed successfully, the function test can be carried out directly at the devices by testing the functions under normal conditions.

Requirements

A prerequisite for the online function test of a project is that the system must be installed with all the devices. The programming buttons and LEDs of the installed EIB devices should also be freely accessible.
You can use the interface N 148 as an interface between your PC and the *instabus EIB*. The interface
N 148 enables your PC to interface with the *instabus EIB* via the built-in 9-pole SUB D plug and socket device.
The N design is intended for insertion in standard distribution boards e.g. next to the power supply unit
N 122. The connection to the bus line is carried out via pressure contacts on the built-in bus coupling unit. The connection to the PC is established with the 9-pole SUB D socket of the interface N 148 to COM 1 or COM 2.



Easy starter must be installed on the PC which you wish to use for the function test and the project must be made available. If you have created the project on another PC, you must copy it to the test PC (e.g. using a diskette). In addition to the mouse or a trackball, the PC must have a serial interface. If the serial interface of the PC is a 9-pole plug, the connection cable must have a parallel design. If a 25-pole interface is used, the cable like the one shown in the following drawing must be used.



Downloading (loading devices)

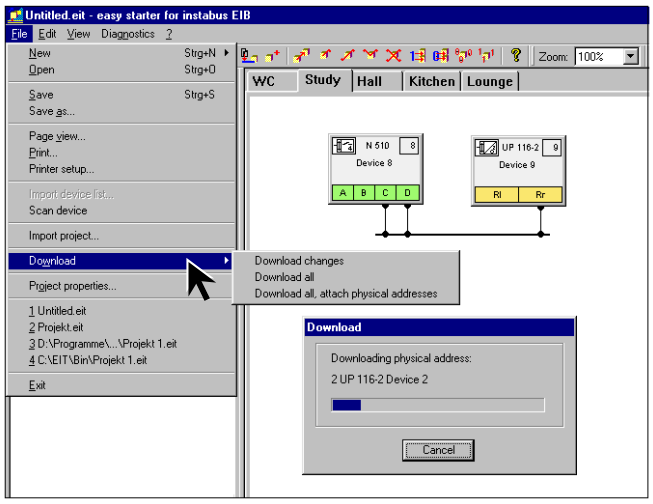
The term "download" implies the transfer (loading) of functions from the project design software into the microprocessor of the respective device.
In the *Download* menu item from the *File* menu, there are three options available for carrying out downloads:

- Download the changes
- Download all the devices
- Download all the devices including the physical addresses

The option *Download changes* only considers the devices that have been modified or recently inserted. You can detect these devices as at least one status flag of the device is shown as red in the device list. For newly inserted devices, you are requested to press the programming button so that the device can be assigned a physical address.

In the command *Download all,* only the devices that already have a physical address are loaded (detected by a green status flag in the device list).
All the devices are loaded even if they have not been modified.

If *Download all, attach physical address* is selected, the complete project is loaded into the corresponding devices on the bus. You are requested to press the programming button for those devices that do not yet have a physical address.



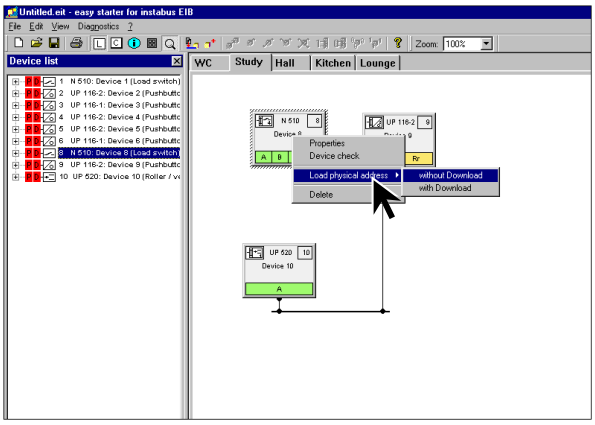
Loading the physical address

With the command *Load physical address*, you are in the position to load the physical address into individual devices. You can then choose between loading them with or without the device functions.

Mark the device whose physical address you wish to load either in the device list or in the Room View. Press the programming button on the device. The red LED lights up. Then click on the command *Load physical address* in the *Edit* menu. You can still choose in the submenu whether you wish to load the physical address with or without downloading the device.

Once the physical address has been downloaded successfully, the programming LED is extinguished.

It is not permitted to press the programming buttons of several devices at the same time, as the physical address will be transferred as undefined.



6 Fault location

If errors occur once the devices have been loaded or during the function testing, there are a variety of diagnosis tasks which you can carry out to eliminate and identify the source of the error.
There are two options available in *easy starter*. With the project-specific option, the *Project check* command, you can search for any design errors (e.g. missing connections). The device-specific option, *Check device*, helps you to find hardware-related problems (e.g. missing bus connection or cable breakage).

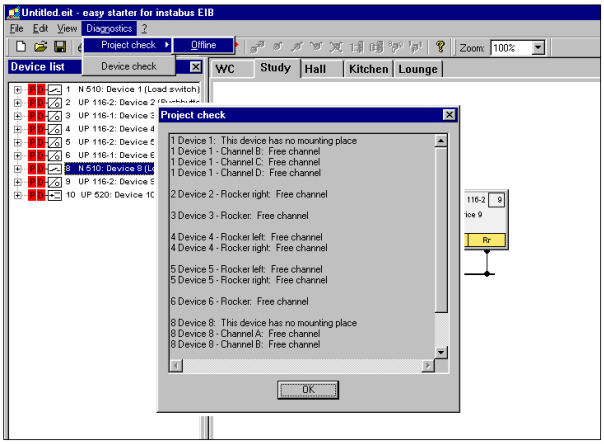
Carrying out a project check

With the command *Project check offline* in the *Diagnosis* menu, you can carry out an offline test of the created project. You do not have to be connected to the corresponding bus system to do this and you can check that the project is correct and carry out any changes or corrections. This test checks all the devices and channels for their properties and links.

The following are checked:

- whether each device has an installation site
- whether each channel has a functional area
- which channels are not being used

Using this method, you can determine while working offline whether all the links have been created and whether the properties have been assigned to all the devices. You can also check projects offline to rule out defective functions for the online function test. A second benefit of this test is that you can quickly have an overview of the available capacity of projects that have already been created.

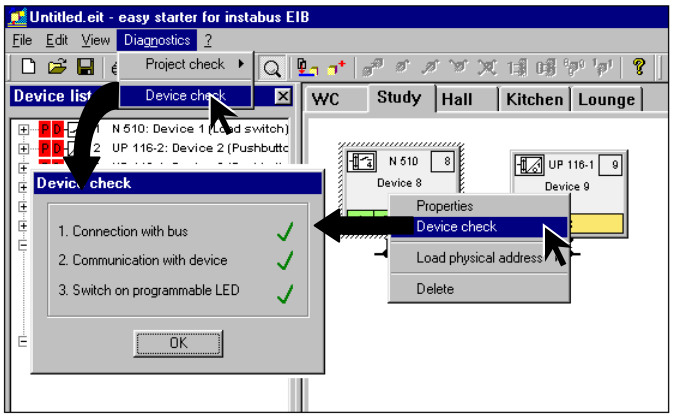


Checking a device

Using the command *Device check*, you can test individual devices for their function as well as check the connection with the bus. This is however only advisable if a physical address has already been assigned to the device.
The following functions are tested:

- connection to the bus
- communication with the device
- function of the programming LED

Mark the device that is to be tested in the Room View or in the device list.
Then click on the command *Device check* in the *Diagnostics* menu or in the context menu of the device. A check box opens which displays the status of the testing process. A green tick next to the check points shows that the test has been successful while a red cross shows the device has failed a test.



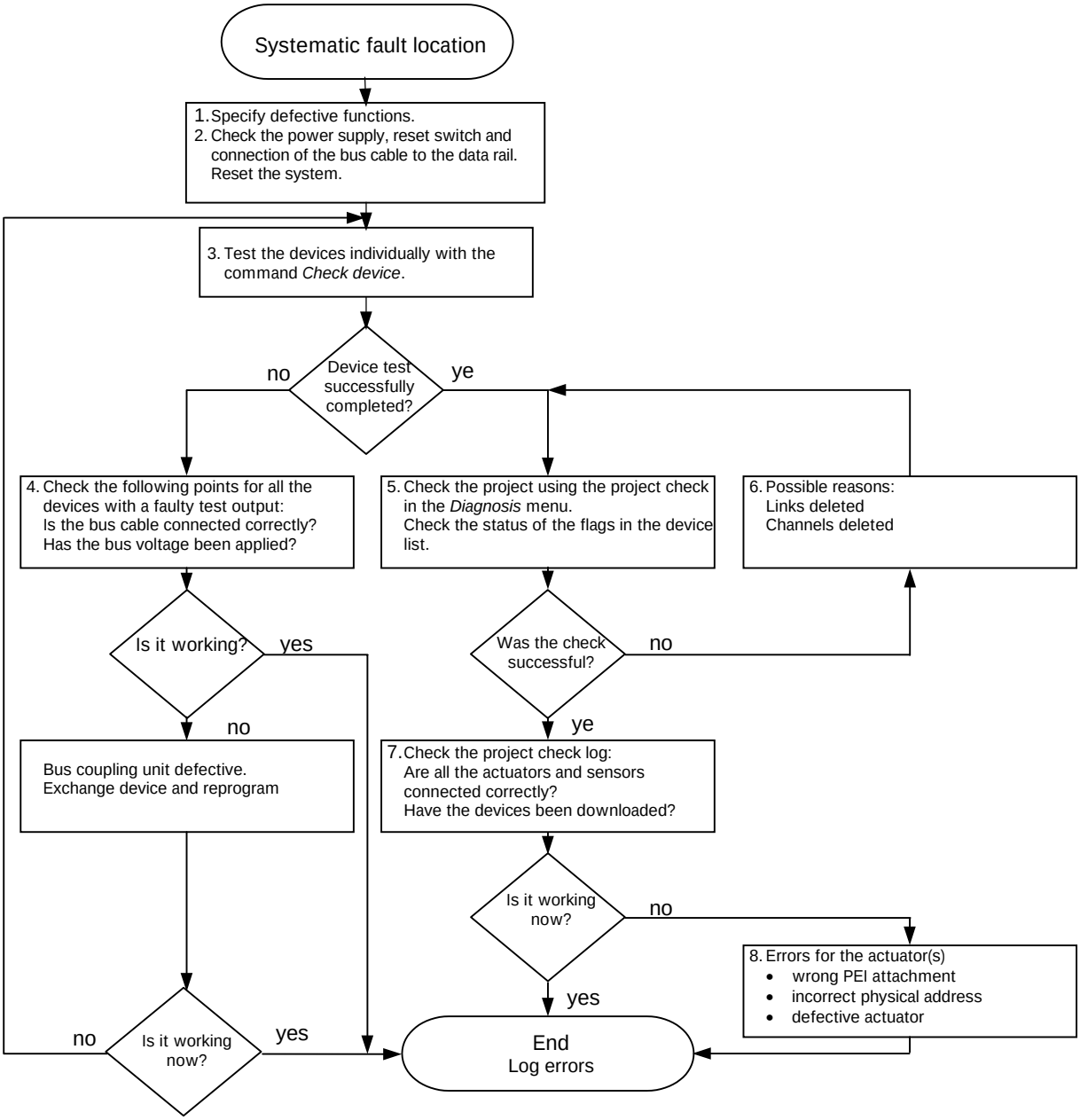
Diagnosis

The connection with the bus has failed:
Check the following points:
Check the connection between the PC and the EIB interface by carry out the test with another device.
If the fault has not yet been rectified, check the connection of the bus cable to the data rail connector.
Is the power supply functioning correctly?
If the green LED on the power supply unit lights up then it is functioning correctly.
You can first try to remove the problem by resetting the system. To do this, you must set the reset switch to RESET for approx. 2-3 sec.
If the LED glows yellow, the bus voltage should be checked (> 21 V) and if necessary the power supply must be changed.
If the LED lights up red, there is a short circuit on the bus line.

Communication with the device has failed:
Check the following point:
Is the physical address correct?
Reload the physical address
Carry out a download
When you press the programming button of the device, the LED should light up. If it does not, check the connection and the bus voltage at the bus terminals (>21V).
The device will possibly need to be exchanged.

If the programming LED lights up during the test, this indicates that the device that has been tested in the project corresponds to the device in the installation.

The following diagram shows the structure of the fault location process:



7 The menus of easy starter for instabus EIB

All the commands that are available in "Easy starter" can be found under the menu items in the menu bar. You can refer to the following section whenever you are looking for a particular function or command that you need to design your project. The individual menu items are described individually in detail and you can therefore have a quick overview of their functions.

File menu

New **(Ctrl+N)**

This menu item contains a further submenu with the commands: *Room* and *Project*. These commands open a new unnamed project (*Project*) or insert a new room in the Room View of your project (*Room*). The push button combination Ctrl+N only opens a new project.

Open **(Ctrl+O)**

You can open an existing project with this menu item. The dialog field *Open* appears where you can select a project. Select the required project and click on the *OK* button or simply double click on the project.

Save **(Ctrl+S)**
Save as

Using the *Save* menu item, you can save the current project under the existing name. If you have started a new project and have not yet saved it, the dialog field *Save as* appears. You are given various options for saving the project.

Print Preview

The *Print Preview* menu item gives you a preview of the layout of your printout.
There are three ways to display the project documentation:

Graphic:	The individual rooms are displayed as in the Room View. The project properties are listed in the header. The rooms contain all the connections and devices as well as any inserted comment fields.
Table:	The individual devices are displayed with their properties in the form of a table. The project properties are listed in the header. The devices are listed in numerical order in the table together with their properties such as the installation site or physical address.
ETS printout:	All the information is contained in this view which you require in order to design the project in ETS. The data for each device is printed out including the physical address, the application program, the individual parameters, the status flags as well as the objects with the group addresses.

Print

You can print the project documentation using this menu.
There are three ways to print the information.

Graphic:	The individual rooms are printed out as in the Room View. The project properties are listed in the header. The rooms contain all the connections and devices as well as any inserted comment fields.
Table:	The individual devices are displayed with their properties in the form of a table. The project properties are listed in the header. The devices are listed in numerical order in the table together with their properties such as the installation site or physical address.
Device data:	All the information is contained in this view which you require in order to design the project in ETS. The data for each device is printed out including the physical address, the application program, the individual parameters, the status flags as well as the objects with the group addresses. You can also select individual devices.

Printer settings

The dialog window *Printer settings* appears when this menu item is selected. You can select a printer in this dialog and configure it via the *Properties* button. The paper format and size can also be specified.

Import partial project

Using this menu item you can insert existing projects (e.g. sample rooms with standard devices) into your current project. During the import, all the rooms, devices and links in this partial project are also transferred. If there are "Panic On" and "Central Off" circuits in the current and imported project, these are combined.

Download
- the changes
- all devices

Via this menu item, the project is loaded into the corresponding devices on the bus that already have a physical address. If *Download the changes* is selected, the status flag for the download (D) is also evaluated and only the devices that are not set (red flag) are edited.

- all devices incl. physical address

The complete project is loaded into the corresponding devices on the bus when this menu item is selected. In addition, a physical address is assigned to the devices that do not yet have a physical address. You are requested via a dialog window to press the programming button for these devices.

Project properties

This menu opens the *Project properties* dialog where you can enter project-specific data such as the customer name, editor etc. This data is also used for the project documentation.

Exit **(ALT+F4)**

You can exit the program with this menu item.

Edit menu

The *Edit* menu contains all the commands which you require in order to be able to edit both the project and the inserted devices.

Undo **(Ctrl+Z)**

You can undo the last action that you carried out here (e.g. *Link* or *New room*). The command is greyed out if it is not possible to undo the last action.

Cut **(Ctrl+X)**

With this command you can cut a channel from a device and insert it in another room. Existing connections are not separated as a result of this cut and paste process. The command can be cancelled at any time by clicking on another command or another place in the room. The command is only available if a channel has been marked.

Insert **(Ctrl+V)**

The channel that has been cut can be pasted into another room with this command. Existing connections are transferred as well. The connections that lead to other rooms are then denoted by room tags on the right and left borders of the room.

Delete (Del)

This command deletes devices or channels from the Room View. The devices still exist however in the project and are greyed out in the device list. Connections can be deleted with this command. The command is however only available if a channel, device or connection has been marked.

Insert comment

You can insert comment field in the rooms with this command. The comment fields can be moved to any position in the Room View. They are also contained in the graphical printout.

Remove device

This command deletes a marked device completely from the current project. All the associated connections are also deleted.

Connection

With this command, you can link channels together with circuits in the Room View. You can create links between two or several channels based on conventional circuit types e.g. two-way circuits. An Assistant helps you by displaying the next step of the process in the status line or in the information window. The individual connection types are contained in the submenu and can be selected from there. Group addresses are automatically assigned when connecting. They are then loaded into the devices at a later date.

Load physical address

With *Load physical address,* individual devices can be given a physical address.

View menu

The *View* menu offers functions for adapting the display of the "Easy starter" window.

Toolbar
Statusbar

These commands display or hide the toolbar or status line. To display them, select the check box next to the name of the bar. To remove them, deactivate the corresponding check box.

Device list

With this command, you can display or hide the device catalog in the Project Design window. All the devices which exist in the current project are listed here. The device list can be created or imported during the configuration. When a project is called up, the device list is displayed on the left-hand side of the screen. It can however also be displayed in its own window and be moved to any position in the Project Design window.

Device catalogue

You can display or hide the device catalog in the Project Design window via this command. When it is activated, the device catalog can be moved to any position in the Room View.

All rooms

With this command you can change from the Room View to the multi-room display. In this display mode, all the individual buses are merged and depicted as a single bus. The rooms are displayed next to each other and given a header which contains the name of the room. The total project window only serves as a display, whereby the display of the individual links functions in the same way as in the normal room depiction. The order of the rooms is produced from the order (of index cards) in the standard display.

Zoom

The Room View can be enlarged or minimised using this command.

Properties

This command opens the properties dialog of the marked device or channel.

Settings

You can carry out the general settings for the program here. For many of the settings you must restart "Easy starter" to activate them.

Diagnosis menu

Check project offline

You can subject the created project to an offline test with this menu item. To do this, you do not have to be connected to the corresponding bus system and can thus check that the project is correct and carry out any necessary changes or corrections. This test checks all the devices and channels for their properties and connections.

Device check

With this command, you can check individual devices for their function as well as the connection to the bus. This is however only a good idea if the device has already been assigned a physical address.

Help menu

This menu item gives you access to various tools to help you to operate the program.

Help

This command opens the online index as well as the table of contents for the *Help* system for "Easy starter".

About easy starter for Instabus EIB

Displays the version number of "Easy starter for *instabus EIB*" as well as copyright information.