

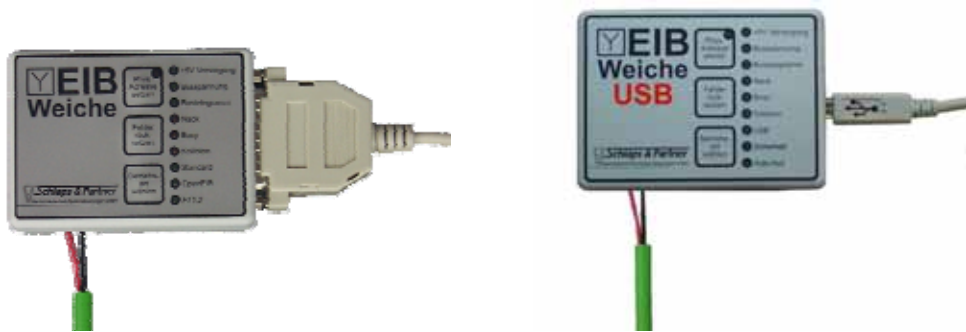


**Automations- und
Steuerungstechnik GmbH**

User manual

EIBWeiche

Serial/USB



**The fast local buscoupler
for the EIB**

Order codes:

EIBWeiche Visualization serial: E001-B902101

EIBWeiche Visualization USB: E001-B902102

EIBWeiche Visualisierung USB REG: E001-B902104

IMPORTANT-READ CAREFULLY:

This b+b End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and b+b Automations- und Steuerungstechnik GmbH, for the software product identified above, which includes computer software and may include associated media, printed materials, and "online" or electronic documentation ("SOFTWARE PRODUCT"). By installing, copying, or otherwise using the SOFTWARE PRODUCT, you agree to be bound by the terms of this EULA.

SOFTWARE PRODUCT LICENSE**1. COPYRIGHT TREATIES**

The SOFTWARE PRODUCT is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. The SOFTWARE PRODUCT is licensed, not sold.

2. GRANT OF LICENSE.

This EULA grants you the following rights:

- a. Software Product. b+b grants to you as an individual, a personal, nonexclusive license to make and use copies of the SOFTWARE for the sole purposes of using the SOFTWARE's functionality.
- b. Storage/Network Use. You may also store or install a copy of the SOFTWARE PRODUCT on a storage device, such as a network server, used only to install or run the SOFTWARE PRODUCT on your other computers over an internal network; however, you must acquire and dedicate a license for each separate computer on which the SOFTWARE PRODUCT is installed or run from the storage device. A license for the SOFTWARE PRODUCT may not be shared or used concurrently on different computers.
- c. Electronic Documents. Solely with respect to electronic documents included with the SOFTWARE PRODUCT, you may make an unlimited number of copies (either in hardcopy or electronic form), provided that such copies shall be used only for internal purposes and are not republished or distributed to any third party.

3. DESCRIPTION OF OTHER RIGHTS AND LIMITATIONS.

- a. Limitations on Reverse Engineering, Decompilation, and Disassembly. You may not reverse engineer, decompile, or disassemble the SOFTWARE PRODUCT.
- b. Separation of Components. The SOFTWARE PRODUCT is licensed as a single product. Its component parts may not be separated for use on more than one computer.
- c. Changing documentations. You may not make changes to the documentation of the SOFTWARE PRODUCT.
- d. Termination. Without prejudice to any other rights, b+b may terminate this EULA if you fail to comply with the terms and conditions of this EULA. In such event, you must destroy all copies of the SOFTWARE PRODUCT and all of its component parts.

4. COPYRIGHT.

All title and copyrights in and to the SOFTWARE PRODUCT (including but not limited to any images, photographs, animations, video, audio, music, text, and "applets" incorporated into the SOFTWARE PRODUCT), the accompanying printed materials, and any copies of the SOFTWARE PRODUCT are owned by b+b or its suppliers. The SOFTWARE PRODUCT is protected by copyright laws and international treaty provisions. Therefore, you must treat the SOFTWARE PRODUCT like any other copyrighted material except that you may install the SOFTWARE PRODUCT on a single computer provided you keep the original solely for backup or archival purposes. You may not copy the printed materials accompanying the SOFTWARE PRODUCT.

5. LIMITED WARRANTY

Except with respect to the REDISTRIBUTABLES, which are provided "as is," without warranty of any kind, b+b warrants that (a) the SOFTWARE PRODUCT will perform substantially in accordance with the accompanying written materials for a period of ninety (90) days from the date of receipt, and (b) any hardware accompanying the SOFTWARE PRODUCT will be free from defects in materials and workmanship under normal use and service for a period of one (1) year from the date of receipt.

6. CUSTOMER REMEDIES.

b+b's entire liability and your exclusive remedy shall be, either (a) return of the price paid, or (b) repair or replacement of the SOFTWARE PRODUCT or hardware that does not meet b+b Limited Warranty. This Limited Warranty is void if failure of the SOFTWARE PRODUCT or hardware has resulted from accident, abuse, or misapplication.

NO OTHER WARRANTIES: TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, b+b DISCLAIMS ALL OTHER WARRANTIES

NO LIABILITY FOR CONSEQUENTIAL DAMAGES: TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL b+b OR ITS SUPPLIERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF OR INABILITY TO USE THE SOFTWARE OR HARDWARE PRODUCT, EVEN IF b+b HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Life support:

These products are not designed for use in life support appliances, devices or systems where malfunction of these products can reasonably be expected to result in personal injury. b+b customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify b+b for any damages resulting from such application.

Copyright 1998-2007 b+b Automations- und Steuerungstechnik GmbH. All rights reserved.

Microsoft and Windows are trademarks of Microsoft Corporation.

This handbook describes also functions, which are options.
Only qualified persons are allowed to install our units.

Softwaredesign und Coding:
Documentation:
Editor:

Volker Knapp, Hartmut Zander, Peter Bernert
Frank Schlaps, Peter Bernert
Frank Schlaps



Klingenweg 17
64385 Reichelsheim
Tel: 06164 / 912057
e-mail: support@bb-steuerungstechnik.de
internet: <http://bb-steuerungstechnik.de>

Contents

Highlights EIBWeiche	6
Fields of application for the EIBWeiche.....	6
Package contents of the EIBWeiche	6
Introduction.....	7
Connecting the EIBWeiche.....	8
Description of the EIB-Weiche LEDs.....	9
Installation Windows-USB driver (EIBWeiche USB).....	13
Setting the physical address of the EIBWeiche	13
EIBWeiche quickstart „Step for step“	15

Highlights EIBWeiche

- Direct coupling to EIB (two-wire)
- Coupling to the PC over serial interface or USB (Windows 2000 and Windows XP)
- Small dimensions for the mobile application
- Programming of the EIB over ETS and Standard-Protocol or direct over USB
- Direct coupling to FIAVis (FIAVis Commander, OPCServer, FIAVis.VB)
- Direct coupling with the virtual Control-Panel EIB Control Platform (optional)
- Separate OPC-Server available (optional)
- Contained in the EIBDoktor-package as powerful EIB-Analysing-Tool
- Open protocol (OpenEIB) between PC and EIBWeiche for creating own applications with EIB-coupling

Fields of application for the EIBWeiche

- Programming the EIB-world via ETS
- Buscoupler for FIAVis data pool
- Server for the EIB-Control-Panel (simple local visualization)
- Buscoupler for external visualizations (serial or USB with direct driver-implementation / OPC)
- Error analysis with the EIBDoktor-package

Package contents of the EIBWeiche

- EIBWeiche-buscoupler
- Depending on the selected type of connection/version:
 - serial cable incl. PS2-connection-adapter
 - serial cable incl. wall power supply
 - USB connection cable
- Software (FIAVis and optional: EIBDoktor, OPC-Server, ASCII)
- Documentation

Introduction

The FIAVis Manager is the central tool for creating EIBWeiche-FIAVis projects: with the FIAVis Manager the projection information is generated for the FIAVis data pool (and so FIAVis Visualizations, OPC-Server, etc).

The FIAVis Manager manages projects for:

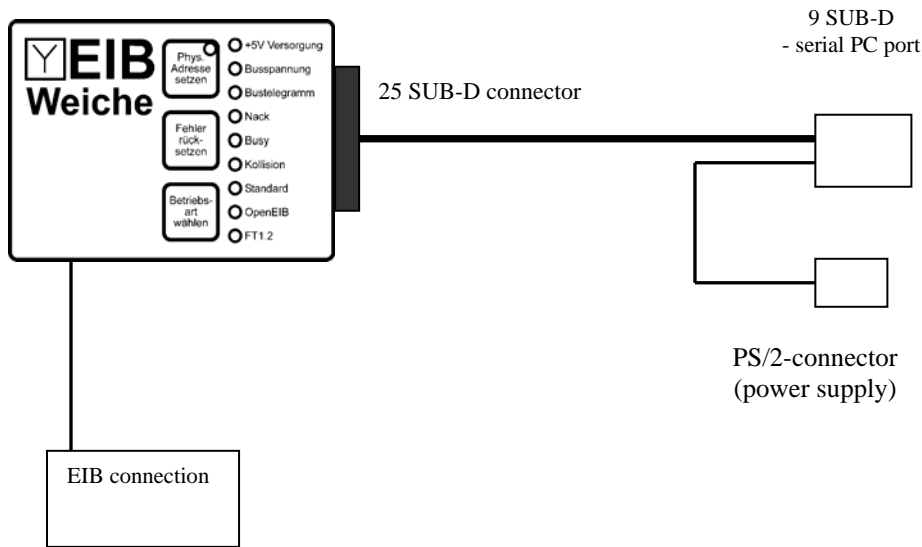
- „CCEIBGW“: the universal network-EIB Gateway
- „CCEIBSPS“: the intelligent processing unit in the EIB incl. network-gateway functionality
- „EIBWeiche“: the fast serial/USB buscoupler with simple protocol
- „EIBNet/IP-Router“: connection over network to the EIB
- “OPC”: connections using external OPC Servers.

The configuration of a FIAVis data pool as well as the parameterization of the process items and logic programs via FIAVis Manager is described in detail in the FIAVis user manual.

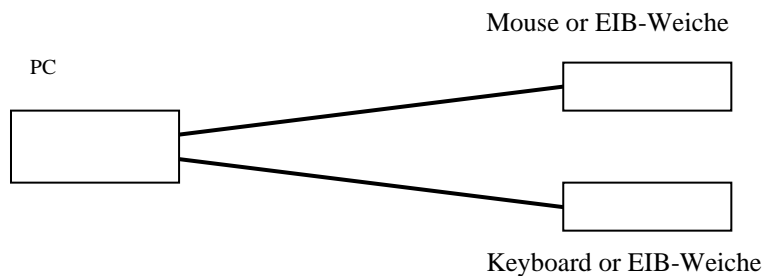
EIBWeiche-device connections and additional software-Tools/drivers (i.e. USB driver) are described in this manual.

Connecting the EIBWeiche

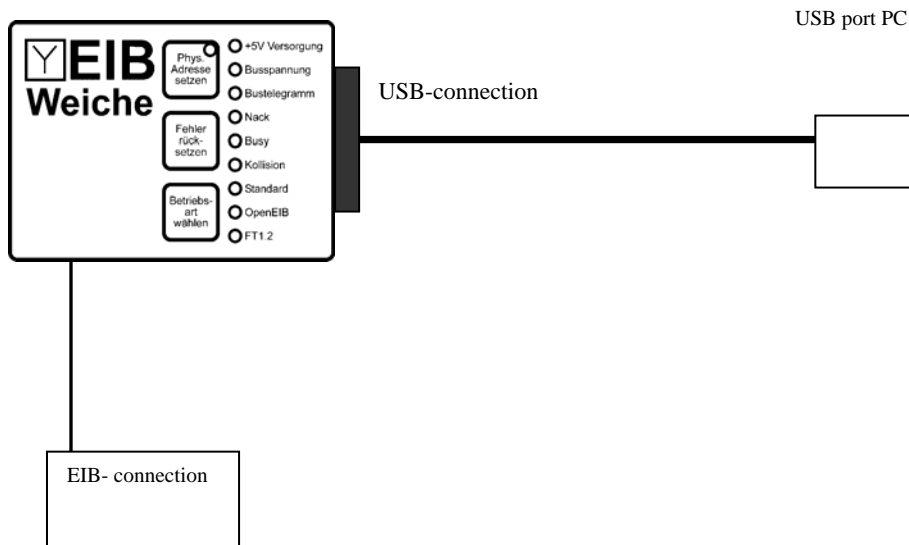
EIB-Weiche (serial)



PS/2 Y-cable



EIBWeiche (USB)



Description of the EIB-Weiche LEDs

EIBWeiche USB LEDs

+5V Versorgung (english: +5V power)

This LED is active as soon as the EIBWeiche is correctly connected to the PC.

Busspannung (english: bus voltage)

If the EIBWeiche is connected to the EIB, this LED has to be active constantly. If the LED is flashing, the EIB is not correctly connected to the EIBWeiche (f.e. not connected at all, or lines are swapped, or no voltage is on the EIB)

Bustelegamm (english: bus telegram)

This LED is flashing when an EIB telegram gets detected.

Nack

As soon as a bus telegram is received with a NACK(=NOT ACKNOWLEDGE) state, this LED gets activated. To reset the LED display, push the button "Fehler Rücksetzen" (=“reset error“).

The EIBWeiche will of course work properly, even if this LED is active. The LED is just a simple error diagnosis for the connected EIB.

Busy

As soon as a bus telegram is received with a BUSY state, this LED gets activated. You can turn off the LED again by pressing the button "Fehler Rücksetzen" (=“reset error“). If you have an high bus load (>50%), the busy LED will be flashing. The EIBWeiche will of course work properly, even if this LED is active. The LED is just a simple error diagnosis for the connected EIB.

Kollision (english: collision)

As soon as a telegram collision or bus disturbances are detected, this LED gets activated. Please note that also the (dis-)connection of other bus devices can cause short bus disturbances! To reset the LED display, push the button "Fehler Rücksetzen" (=“reset error“). The EIBWeiche will of course work properly, even if this LED is active. The LED is just a simple error diagnosis for the connected EIB.

USB

This LED can have three different states:

- LED off: the EIBWeiche is not connected to a PC, or the USB drivers for the EIBWeiche are not installed on the PC yet.
- LED on: the EIBWeiche is connected to the PC, and the USB drivers are correctly installed. Currently no PC software is communicating with the EIBWeiche
- LED flashing: the EIBWeiche is in usage by a PC software right now.

Sicherheit (english: security)

If you have activated this mode by pressing the button "Betriebs-Art wählen" (=“select mode“), nobody will be able to program EIB devices with the ETS. Therefore this mode acts like a version of an „EIBWächter“ device.

Auto-Ack

If you have activated this mode by pressing the button "Betriebs-Art wählen" (=“select mode“), the EIBWeiche will acknowledge every not acknowledged bus telegram, reducing bus load. Therefore this mode acts like a „EIB-Ack device“.

EIBWeiche RS232

+5V Versorgung (english: +5V power)

This LED is active as soon as the EIBWeiche is correctly connected to the PC and the power supply/PS2 port.

Busspannung (english: bus voltage)

If the EIBWeiche is connected to the EIB, this LED has to be active constantly. If the LED is flashing, the EIB is not correctly connected to the EIBWeiche (f.e. not connected at all, or lines are swapped, or no voltage is on the EIB)

Bustelegramm (english: bus telegram)

This LED is flashing when an EIB telegram gets detected.

Nack

As soon as a bus telegram is received with a NACK(=NOT ACKNOWLEDGE) state, this LED gets activated. To reset the LED display, push the button "Fehler Rücksetzen" (=“reset error“).

The EIBWeiche will of course work properly, even if this LED is active. The LED is just a simple error diagnosis for the connected EIB.

Busy

As soon as a bus telegram is received with a BUSY state, this LED gets activated. You can turn off the LED again by pressing the button "Fehler Rücksetzen" (=“reset error“). If you have an high bus load (>50%), the busy LED will be flashing.

The EIBWeiche will of course work properly, even if this LED is active. The LED is just a simple error diagnosis for the connected EIB.

Kollision (english: collision)

As soon as a telegram collision or bus disturbances are detected, this LED gets activated. Please note that also the (dis-)connection of other bus devices can cause short bus disturbances! To reset the LED display, push the button "Fehler Rücksetzen" (=“reset error“).

The EIBWeiche will of course work properly, even if this LED is active. The LED is just a simple error diagnosis for the connected EIB.

Standard (PC-protocol)

- LED on: the EIBWeiche is communicating with the PC using the standard PEI16 protocol and a 9600 baud rate.

- LED flashing: the EIBWeiche is communicating with the PC using the standard

PEI16 protocol and a 19200 baud rate.

Please note: to use the EIBWeiche with the ETS software, you have to set the „standard“ protocol.

You can select this protocol by pressing the button "Betriebs-Art wählen" (=“select mode“).

OpenEIB

- LED on: the EIBWeiche is communicating with the PC using the OpenEIB protocol.

Please note: to use the EIBWeiche with the EIBDoctor, you have to set the „OpenEIB“ protocol.

You can select this protocol by pressing the button "Betriebs-Art wählen" (=“select mode“).

FT1.2

This mode is not supported.

Installation Windows-USB driver (EIBWeiche USB)

On the delivered b+b-EIBTools-CD you find the USB-driver for Windows 2000 and Windows XP. Older Windows operating systems are not supported! If the EIBWeiche is connected the first time to an USB-port of the PC, the Windows-Hardware-Installationassistant is opened. This assistant might ask for the installations folder of the USB driver. Here you have to specify the CD, folder „USB“.

After successful installation of the driver, in the Windows device manager you can see the entry „EIB-Weiche USB Geräte“ -> „EIBWeiche USB“ if the EIBWeiche USB is connected.

If you want to use the EIBWeiche USB with the ETS3 or ETS2 (from Version 1.2) as programming device, so you have to install some more drivers. For the application as visualization-coupling (i.e. for FIAVis) these ETS-drivers are not required.

The ETS-USB-drivers can be installed over the b+b-EIBTools-CD installationsprogram. Here a short description how to install the ETS-drivers manually:

1. Install the Windows-USB-driver as described above (connect EIBWeiche USB to the PC)
2. Copy the folder „Setup\bin\USB“ and all subfolders from the CD to the local computer
3. In the local „..\USB\ETS3“-folder start the file „EIBWeicheUSB.exe“ one time (double click in the explorer)

Now the usage per ETS3 is already possible, in the Windows device manager you will now also see the entry „KNX Netzwerk Geräte“->“EIB-USB Datenschnittstelle“.

For using an ETS2 over USB the following steps have to be performed, too:

4. Copy the files „ETS2DriverSwitch.exe“, „PEI_USB32.dll“ and „PEI_USB.dll“ from the „..\USB\ETS2“ folder direct into the folder of the installed ETS2.
5. Start the file „ETS2DriverSwitch.exe“ in the ETS2-folder (double-click) and select as interface „USB“.

Now the ETS2-USB-driver is active, no matter if you have selected „COM1“ or „COM2“ in the ETS2, the communication will be handled over the USB interface. If you want to use a serial interface again, you can change the settings again with the „ETS2DriverSwitch.exe“.

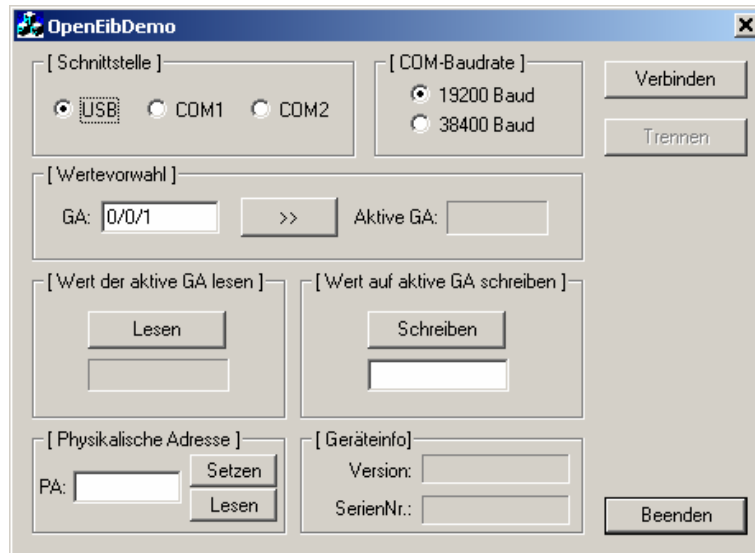
Setting the physical address of the EIBWeiche

The EIBWeiche has, like all EIB-devices, an own programming button (in the compact case labeled with „Phys. Adresse setzen“). With this button and an ETS-software you can change the physical address as usual.

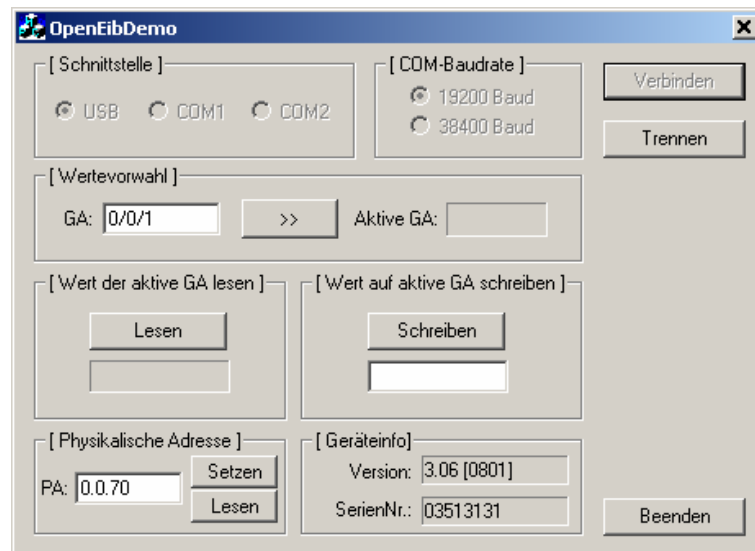
On the b+b-EIBTools-Software-CD (is delivered with every EIBWeiche) you can also find a simple test application for EIBWeiche-devices, with which you can also change the physical address very easy.

For this go with the Windows-Explorer to the CD-folder „SDKs and more\OpenEib\OpenEib SDK\BIN“. In this folder there is the file „OpenEibDemo.exe“, which you can start directly from the CD (without installation) with a double-click.

The following window appears:



Now just select the interface (USB, COM1/2), and click on the button „Verbinden“. So the area beneath is filled with the device infos (firmwareversion, serial number) and the actual phys. address:



In the example the EIBWeiche has the physical address „0.0.70“. If you want to change this address, you have to enter the new address and click on the button „Setzen“.

With the help of the OpenEIBDemo-program you can also test, if reading and writing of group addresses over the EIBWeiche works: In „Wertevorwahl“ enter the group address of a switch (EIS-type 0x10 = binary) and per „>>“-button activate the address. Now you can request/read per „Lesen“ or „Schreiben“ the value on the bus.

EIBWeiche quickstart „Step for step“

To make the access to the FIAVis-EIBWeiche world as easy as possible, here is a guidance that shows the most important steps of using an EIBWeiche and creating a project.

1. You need a PC with NT/2000/XP. Connect the EIBWeiche to the PC. If you have an USB-EIBWeiche, the Win2000/XP driver is automatically installed from the b+b-EIBTools-CD, if you connect the EIBWeiche the first time.
2. Test the communication between PC and EIBWeiche, while starting the tool „OpenEIBDemo“ direct from CD (it is located in the folder „SDKs and more\OpenEib\OpenEib SDK\BIN“). With this tool you can establish a connection to the EIBWeiche and also directly configure the physical EIB-address.
3. Creating a project: Start the FIAVis Manager. At the first start an additional window appears, that remembers you to enter the license-number and to activate the FIAVis Base data pool. Follow these instructions! In the Manager-main window, where all available projects are listed, an EIB-Weiche test project is already accessible. To create a new project, click with the right mouse button in the project tree and select in the following menu ‚New project‘
4. A new project is created, you can choose the project name like you want (you can also change the name at any time, while you do a „slow“ left click). The connection parameters of the EIBWeiche (USB/COMx) must be configured in the project settings (in the right Manager-window double click the settings, in the following window the settings then can be changed).
5. Now i.e. the EIB addresses to use must be defined. To do so you have to open the „EIB addresses configuration“-window of the project. For the definition of the EIB-process items you should use an existing ETS-project. All important address-data will be fetched by importing the ETS-project. From all available group addresses/objects from the list above select the data to use in your FIAVis project (list beneath). At some data items you have to reparametrize the EIS-types, the ETS contains no information about the type. Hint: you can also define group addresses manually without an ETS-project (button „Define Addr.“).
6. The process item definition must now be transferred to the FIAVis data pool. For this select the project in the left tree and in the menu click on „Transfer data“ or click on the „Transfer“ button. In the following window you only have to press the start-button, the transfer begins. The projection data is saved in the „Data“-folder of the des FIAVis Base service and the connection to the EIBWeiche is opened.
7. You have created your first FIAVis project! You can now view and write the actual values of the process items, while pressing on the button "Values" in the „Transfer“-window. Please consider: many process items will first have no value („bad“), as long as the according address has been sent over the EIB one time. With the flag „Startup read“ for EIB-addresses you can tell FIAVis to request the values automatically at the beginning (but also this action will take some time depending on the number of addresses).
8. Of course now also the FIAVis OPCServer is ready for use, or can create own visualizations with the FIAVis Designer, which base on the process items, or you can access process items over FIAVis.VB. The necessary steps are explained in the according user manual.