

## First steps with your new INSEVIS-PLC

## Thank you for choosing INSEVIS products

Now you have got a product, what offers you more than the common S7- functions and what makes you more independent.

This **short introduction** guarantees a **fast start** into the world of INSEVIS for you. Stay in your S7-world while programming the STEP7 and therefore we explain the first steps with Siemens-Simatic-Manager and our INSEVIS S7-CPUs.



Before you contact our free service please download and

- read the technical information and manuals of your product from referring product web site of INSEVIS.
- check the sample programs and video tutorials at the download web site of INSEVIS.

Normally you should find your information there already.

### Step 1: Set up the IP-address of your new device to your network needs

All INSEVIS- PLCs will be delivered with default **IP-address 192.168.80.50.** First thing to do is adapting this IP-address onto your own network mask. Next steps show the most popular ways to do that.

### 1.1 IP-Adress settings directly on touch panel

Your S7-Panel-PLCs will be delivered with 31 15.09.16 11:48 Operator INSEVIS a sample-visualization and an S7-program what contains the INSEVIS-SFB129 to IP: 168.80.50 edit Entering directly at the panel IP-addresses. All manuals are referred to Net: 255 255 255 0 this visualization too. read in from S7-program Router:  $n \cap n \cap n$ orightness Here you can edit the IP-address in the Systemscreen "System" in the mode "Entering 31 2016/09/15 11:48:20 backup directly at the panel" WITHOUT any SEC208 Date- / Timefield, editable with access rights only Simatic<sup>®</sup>- Manager or TIA-Portal. This is Backsound the fastest way to insert INSEVIS into light your network area. Clean screen Germar English back System ahead

#### 1.2 IP-address settings by ServiceStage

Install the free ware "ServiceStage" (get it before from download-area at www.insevis.com).

After selection of your network adapter (this one, with them you access your LAN) choose the new upcoming partner, double click and select "Assign IP-adress".

| Accessible devices                             |  |  |   |  |
|--|--|--|---|--|
| Name   | IP address                               | Netmask  | Router address  | MAC  |
| INSEVIS PC57×V                                 | 192,168,72,100                           | 255.255.255.0  |   | 00-50-C2-DF-31-CD  |
| Update Assign IP address LED blink test (3sec) |  |  |   |  |
|  | Accessible der<br>Name<br>INSEVIS PCS7xV | Accessible devices<br>Name IP address<br>INSEVIS PC57xV 192,168,72,100<br>Update | Accessible devices<br>Name IP address Netmask<br>INSEVIS PC57xV 192.168.72.100 255.255.255.0<br>Update Assign IP addres | Accessible devices<br>Name IP address Netmask Router address<br>INSEVIS PC57xV 192.168.72.100 255.255.0<br>Update Assign IP address LED blink te |



## 1.3 IP-address settings by the SIMATIC® -Manager

#### Select the PLC

 $\rightarrow$  Target system  $\rightarrow$  Display Accessible Nodes (appears as INSEVIS "product name", here PC57xV for

- PC570V and PC577V)  $\rightarrow$  INSEVIS PC57xV select it / mark it
  - $\rightarrow$  INSEVIS PC57XV select it / mark it  $\rightarrow$  PLC
  - $\rightarrow$  Edit Ethernet Node

- SIMATIC Manager Accessible Nodes

   File Edit Insert PLC View Options Window Help

   Image: State of the state of the
- Hint: Reconfigure / deactivate (all) your firewall(s) to allow this connection (temporary only!)
  - IP-address of your PC and of the PLC must be in a common net (in this sample: 192.168.80.xxx)
  - Check the IP-address of your PC with the cmd-command "ipconfig" and verify the net with those of your PLC.

| Change IP-address  | Edit Ethernel Node  |
|--|---|
| → enter new Box<br>"Set IP-configuration"  | Ethernet node   |
| select "Use IP parameters"<br>→ enter IP address<br>→ enter Subnet mask                      | MAC address: 00 50 C2 DF 33 2E Browse   |
| → push the button:<br>"Assign IP Configuration"<br>→ acknowledge with "OK"                   | Set IP configuration<br>© Use IP parameters   |
| refresh IP-address<br>Before using the new IP-address,<br>it must be searched & found again: | IP address:     192.168.80.50     © Do not use router       Subnet mask:     255.255.0     © Use router       Address:     192.168.72.° |
| → PLC<br>→ Display Accessible Nodes<br>OR:<br>→ refresh with "F5"                            | C Ubtan IP address from a DHUP server Identified by C Ident ID C MAC address C Device name  |
| Control IP-address (without fig.)<br>→ PLC   | Client D:   |
| → Display Accessible Nodes → right mouse button → Object properties                          | Assign IP Configuration   |
| Hint: How to set up PG/PC-interface<br>→ Extra   | Device na<br>The parameters were transferred successfully.<br>Please refer to the information on this message in the help<br>system     |
| → Set PG/PC Interface<br>→ select "Access Path"<br>→ select TCP/IP                           | Rese: to lad  |
| $\rightarrow$ acknowledge with "OK:  | Close Hep   |

Hint: For this functions VIDEOS are available at the download area at: <u>www.insevis.com</u> Use these functions for your first steps – it makes it easier!!



## Step 2a: Create a project with CPU and Profibus in Simatic-Manager

| You will need this software:          | 🖶 HW Config - [PC577 (Configuration) IN     | Properties - PN-IO (R0/S2.2)   |
|---------------------------------------|---|--|
| - Simatic-Manager from V5.4 SP5       | Station Edit Insert PLC View Options Win    | General Addresses PROFINET Synchronization Time-of-Day Synchronization   |
| (better V5.5)                         | _ D 😂 ≌~ <sup>©</sup> (¶a) 🖨   Ba ita   🎰 🎰 | Short description: PN-IO   |
| - INSEVIS ConligStage (Freeware)      | 🚍 (0) UR                                    | Device name: PN-IO   |
| Please download actual manual of      | 1<br>2 CPU 315-2PN/DP                       | Support device replacement without exchangeable medium   |
| the referring device                  | X1 RIHO                                     |  |
| 2a.1. Add profil rail                 | X2 P1 Pour<br>X2 P2 Pour 2                  | - Interface  |
|                                       | 3   | Type: Ethernet   |
| 2a.2. Add 315-er CPU                  |   | Device number: 0   |
|                                       |   | Address: 132 158.80.50   |
| Part:                                 |   | incurred. The incurrence in th |
| CPU315-2PN/DP                         |   | Comment  |
| Order no.:                            | <   |  |
| 6ES7315-2EH14-0AB0                    |   |  |
|                                       |   | OK. Cancel Help  |
| <u>Firmware:</u> from V 3.1 or higher | Slot Module Urder number                    |  |
| SP5 of the Simatic-Manager only. If   | 2 CPU 315-2PN/DP 6ES7 315-2EH14             | 4-0AB0 V3.1 2 2 20/7   |
| you don't find it, please update it.  | X2 FNH0                                     |  |
|                                       | X21 Fort7<br>X21 Rot2                       | 2040   |
|                                       | 3   |  |
|                                       | 5   | SIMATIC S7, M7, and C7   |
|                                       |   | [distributed rack]   |
|                                       | Press F1 to get Help.                       |  |

#### 2a.3. Connect Profibus

| optional - shown here                |
|--------------------------------------|
| on the IM151-sample                  |
| $\rightarrow$ ignore, if no Profibus |
| is used                              |

| 🖳 HW Konfig - [INSEVIS (Konfiguration) Beispiel]              |  |
|---|--|
| 💵 Station Bearbeiten Einfügen Zielsystem Ansicht Extras Fenst | er Hilfe 🛛 🗕 🗗 🗙                                 |
| ] D 😅 💱 🔍 🐘 🎒   🖻 🖻   🏜 🎰 👔 🖬 😤 🕅                             | ?  |
|   |  |
|   | Suchen: mt mi                                    |
|   |  |
| X1 ProfiBus Master  | ROFIBUS(1): DP-Mastersystem (1) Profil: Standard |
| X2 Ethernet   | 📃 🗍 🕀 🔁 DP V0-Slaves 🔼                           |
| X2 P1 Port 1  |  |
| X2 P2 Port 2  | DP/PA-Link ■                                     |
| <u>3</u>  |  |
|   |  |
|   |  |
| m_up  | E = ET 200iS                                     |
|   | 🗄 🧰 ET 200iSP                                    |
| Steckplatz 🚦 Baugruppe Bestellnummer                          | Firmw M E A K 🕢 🕀 🚍 ET 200L                      |
| 1   | 💽 💽 💽 ET 200M                                    |
| 2 INSEVIS PC35xP 6ES7 315-2EH14-0AB0                          | V3.1   |
| X1 ProliBus Master  | 2047 🕒 🖬 ET 200R 💽                               |
| X2 Ethemet  |  |
| X2F7 F0r1<br>V2D2 0-42  | 22145 6ES7 151-1CA00-0AB0 ₹<                     |
| 2   | 21/99 Interfacemodul IM151-1 für ET              |
|   | Sendefähigkeit für direkten                      |
| I<br>Drücken Sie F1, um Hilfe zu erhalten.                    | Änd  |

# INSEVIS

## 2a.4. Import the INSEVIS- OB, SFB and SFC into the Simatic Manager

In the manuals (chapter "System functions") all OBs, SFBs and SFCs are listed, what are compatible to STEP®7 from Siemens and are integrated in the INSEVIS- firmware as well as all additional blocks of INSEVIS. Every INSEVIS- block is described exactly in the regarding chapters of INSEVIS manuals.



All additional INSEVIS- blocks are available as **S7-Library** in th internet at <u>www.insevis.de/de/service</u> for free download. It will be offered always the newes library with the most functions, what needs the regarding firmware in the PLC. (e.g. Insevis\_S7-library\_from\_2\_0\_19.zip - works from firmware 2.0.19 and higher).

### Installation of the INSEVIS-S7-library in the Simatic-manager

- 1. File  $\rightarrow$  dearchive
- $\rightarrow$  choose the INSEVIS S7-library.zip file 2. Store
- $\rightarrow$  (choose your folder "S7-Libs")  $\rightarrow$  press "OK"
- 3. Open the library project
  - $\rightarrow$  go to "Libraries"
    - $\rightarrow$  choose "INSEVIS S7-Library"
    - $\rightarrow$  press "OK"
- 4. Copy the selected SFB's by drag'n drop into your project

| ļ | VINSEAI2 2.5 S7Library 1_4 C:\Pr | ogramme\Siemens\St | ep7\S7LIBS\Insevis_ |
|---|----------------------------------|--------------------|---------------------|
|   | ⊡                                | Objektname         | Symbolischer Name   |
|   | 🖻 🛐 CAN Functions                | 🗗 SFB105           | CAN_SEND            |
|   | Quellen                          | 🗗 SFB106           | CAN_RECV            |
|   | Bausteine                        | 🗗 SFB107           | CAN_SD0             |
|   | Communication Functions          | 🗗 SFB114           | CAN_STATUS          |
|   | Hiscellaneous                    | -                  |                     |
|   | H sustage Functions              |                    |                     |

| iffnen Projekt  | X   |
|---|---|
| Anwenderprojekte Bibliothel   | ken Beispielprojekte   Multiprojekte  |
| Name  | Ablagepfad  |
| <ul> <li>INSEVIS S7Library 1_4</li> <li>Redundant ID CGP V40</li> <li>Redundant ID CGP V50</li> <li>Redundant IO MGP V30</li> <li>SIMATIC_NET_CP</li> <li>Standard Library</li> <li>stdlibs (V2)</li> </ul> | C:\Programme\Siemens\Step7\S7LIBS\Insevis_<br>C:\Programme\Siemens\Step7\S7libs\ved_io_1<br>C:\Programme\Siemens\Step7\S7libs\ved_io50<br>C:\Programme\Siemens\Step7\S7libs\ved_io_0<br>C:\Programme\Siemens\Step7\S7libs\simaticn<br>C:\Programme\Siemens\Step7\S7libs\stdlib30<br>C:\Programme\Siemens\Step7\S7libs\stdlibs |
| Markiert Anwenderprojekte: Bibliotheken: Beispielprojekte: Multiprojekte:   | Durchsuchen   |
| OK  | Abbrechen Hilfe   |

# INSEVIS

Show all devices

## Step 2b: Create a project with CPU and Profibus with TIA-portal from Siemens

You need this software: TIA-Portal V12 or higher + INSEVIS ConfigStage

## 2b. 1. Create a device

Add a new device at devices & networks

## 2b. 2. Create a CPU

- Controller: CPU315-2PN/DP
- Order-No.: 6ES7315-2EH14-0AB0
- Firmware-Version: V 3.1



**Devices &** 

networks

## 2b. 3. Set up Ethernet connection in hardware catalog

- Do the device configuration in the new created CPU on the DIN-rail
   → select PROFINETinterface
- At PROFINET-interface (GENEREAL / Properties - Ethernet-addresses) change the IP-address in the field "IP-protocol"

The now configured system data blocks (SDB's) need to be transferred from the hardware manager into the PLC, what automatically makes a restart. To identify your INSEVIS CPUs beside others use the function "accessible nodes"

Only after all the IP-address modification has been done successfully.



# INSEVIS

## 2b. 4. Connect Profibus

(optional - shown here on the IM151-sample → ignore, if no Profibus is used)

- Select Connections in "Net work view" at PLCs "Online & diagnostics" in the hardware-catalog
- Add a IM151 from the hardware catalog
- Connect it like in the Simatic-Manager

The now configured system data blocks (SDB's) need to be transferred from the hardware manager into the PLC, what automatically makes a restart. To identify your INSEVIS CPUs beside others use the function "accessible nodes" Only after all the Profibus communication is transferred into the PLC successfully.

|      | Mi Siemens - Firststeps                 |   |                                     | _ ¤ ×  |
|------|---|---|-------------------------------------|--------|
|      | Project Edit View Insert Online         | Options Tools Window Help   | Totally Integrated Automation       |        |
|      | 📑 🎦 🔒 Save project 🚢 🐰 🗉 🗊              | : 🗙 🍤 ± (여 ± 🛱 🖄 🔃 🗊 및 🔛 🧭 Go online 🦨 Go offline 🍶 🖪 📳 🗶 🖃 🛄                         | POR                                 | TAL    |
| 5    | Project tree 🛛 🖉 🖣                      | Firststeps 🕨 Devices & networks 📃 🖬 🗮 🗙   | Hardware catalog                    | ii 🕨   |
| 1    | Devices                                 | 🖉 Topology view 👗 Network view 🛐 Device view  | Options                             | 1      |
|      | 1900                                    | Network 11 Connections HAII connection V III 🕀 🛨 💽 ± 100%                             |                                     | E E    |
|      | 8                                       |   | ▼ Catalog                           | dw     |
|      | 👻 🔄 Firststeps                          |   |                                     | init a |
|      | Add new device                          |   | C Silter                            |        |
| Cs   | Devices & networks                      | PLC_1<br>CPU 315-2 PN/DP  | Nitt Controllar                     | alog   |
| :    | ▼ PLC_1 [CPU 315-2 PN/DP]               |   | HM                                  | -      |
| In   | Device configuration                    |   | PC systems                          | in t   |
|      | Online & diagnostics     Present blacks |   | Drives & starters                   | 0      |
|      | Tachnology shiactr                      | PN/IE_1   | Network components                  | nii.   |
|      | External source files                   | PROFIBUS_1  | 🕨 🛅 Detecting & Monitoring          | 1e t   |
| - 1  | PLC tags                                |   | ▼ Distributed I/O                   | 00     |
|      | PLC data types                          |   | • 📺 ET 2005P                        | 5      |
| - 1  | Watch and force tables                  |   | • ET 200MP                          | 0      |
|      | 🕨 🙀 Online backups                      | Slave_1   | ▼ ET 200S                           | T      |
| _    | Program info                            | IM 151-1 Stand  | Interface modules                   | ask    |
|      | PLC alarms                              | PLC1  |                                     | ŝ      |
|      | Text lists                              |   | TROFIBUS                            | 100    |
|      | Local modules                           | < II > 0  | 6557 151-1A404-0480                 | 2      |
|      | Distributed I/O                         |   | GES7 151-1AA05-0AB0                 | ibra   |
|      | Documentation cattings                  | Network data  | IM 151-1 FO standard                | rie    |
|      | Languages & resources                   | Properties 1 Info 1 Diagnostics   | • 🧊 IM 151-1 HF                     | 0      |
| em 🛛 | Online access                           | General   | ▶ 🧊 IM 151-1 basic                  |        |
|      | Card Reader/USB memory                  |   | ET 200S Compact 32DI                |        |
|      |   |   | ET 2005 Compact 16DI/16DO           |        |
|      |   | No 'properties' available.  | Unspecified ET2005 interface module |        |
|      |   | No 'properties' can be shown at the moment. There is either no object selected or the | • Lill ET 200M                      |        |
| ie 🛛 |   | selected object does not have any displayable properties.                             | El 200SP                            |        |
|      |   |   | FT ET 200pro                        | _      |
|      |   |   | FT 200eco PN                        |        |
| fv   |   |   | • T 200L                            |        |
| 2    |   |   | • T 200R                            |        |
| ae 🛛 |   |   | Drive interfaces                    |        |
| _    |   |   | Field devices                       |        |
| _    |   |   | Other field devices                 |        |
| _    |   |   |                                     |        |
|      |   |   |                                     |        |
| IS   |   |   |                                     |        |
|      |   | 4   |                                     |        |
|      | > Reference projects                    |   |                                     |        |
|      | > Details view                          |   | > Information                       |        |
|      | Portal view                             | w 🚹 Devices & ne  | Project Firststeps created.         |        |

## 2b. 5: Import the INSEVIS- OB, SFB and SFC into the TIA-portal

In the manuals (chapter "System functions") all OBs, SFBs and SFCs are listed, what are compatible to STEP<sup>®</sup>7 from Siemens and are integrated in the INSEVIS- firmware as well as all additional blocks of INSEVIS. Every INSEVIS- block is described exactly in the regarding chapters of INSEVIS manuals.



All additional INSEVIS- blocks are available as **S7-Library INSEVIS Library (TIA V12).zip** in the internet at www.insevis.com for free download. It will be offered always the newest library with the most functions, what needs the regarding firmware in the PLC, at least 2.0.39).

## Install the INSEVIS-S7-library in the TIA-Portal

- Download latest version of INSEVIS library for TIA-portal,
- store it and extract it in any folder
- below: :

Open library "**INSEVIS Library (TIA V2).al12**" from the referring folder in TIA-Portal as "Global library".→ For more details to "open a library" use TIA-Portal online help.







## Step 3: Configure the CPU and INSEVIS-functions with "ConfigStage" - license free

## 3.1. Select device

Select your device from the list shown first. A window opens up with several areas.

## 3.2. Configure periphery

Drag´drop the periphery modules to the desired slots, parameterize it and assign I/O areas.

### 3.3. Set up communication

Configure the desired interfaces (Ethernet, RS232/485-UART, Modbus, CAN) like shown in the referring manual





The configuration from Simatic-Manager must be transferred into the PLC **FIRST**. With transferring these blocks do overwrite all other system data blocks (and delete ConfigStage-configuration)

**AFTER** that you may transfer the ConfigStage-configuration into the PLC. This download overwrites the referring SDBs only and not the SDBs from Simatic-Manager and keeps the Profibus configuration.

## Additional free tools:

#### Remote account with "RemoteStage" - license free

Download the "RemoteStage" from the INSEVIS- web sites and start it directly (no installing it is a portable version). Upload the visualizations binary from Panel into your PC with this icon Identify the remote device by entering IP-address or look for it in t

| চি বিব |  |
|--------|--|
|        |  |

(requires time, because PLC is still controlling). Alternatively open the binary belonging to this visualization, created by VisuStage (\*.vsbin) (loupe) and go online.

Identify the remote device by entering IP-address or look for it in the network (loupe) and go online.

## Service, know-how-protection and update with "ServiceStage" -license free

Download the "ServiceStage" from the INSEVIS- web sites and:

- Have a closer look to the device information
- change IP-address,
- download new firmware (CPU-T only)
- · read out diagnostic buffer,
- download new program versions,
- create backup data and
- set know-how-protection



#### Safety information

This information contains hints for the first communication with the INSEVIS-PLC and does not substitute a manual. Inform you before you go on programming and using this hardware about all safety instructions, about operation according to regulations, qualified personnel and maintenance.

#### **Qualified personnel**

All devices described in this manual may only be used, built up and operated together with this documentation. Installation, initiation and operation of these devices might only be done by instructed personnel with certified skills, who can prove their ability to install and initiate electrical and mechanical devices, systems and current circuits in a generally accepted and admitted standard.

#### Manuals, sample programs

Additional documentation by manuals is available as well sample applications at the download area of www.insevis.com in English language for free download.

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With publication of this information all other versions are no longer valid.