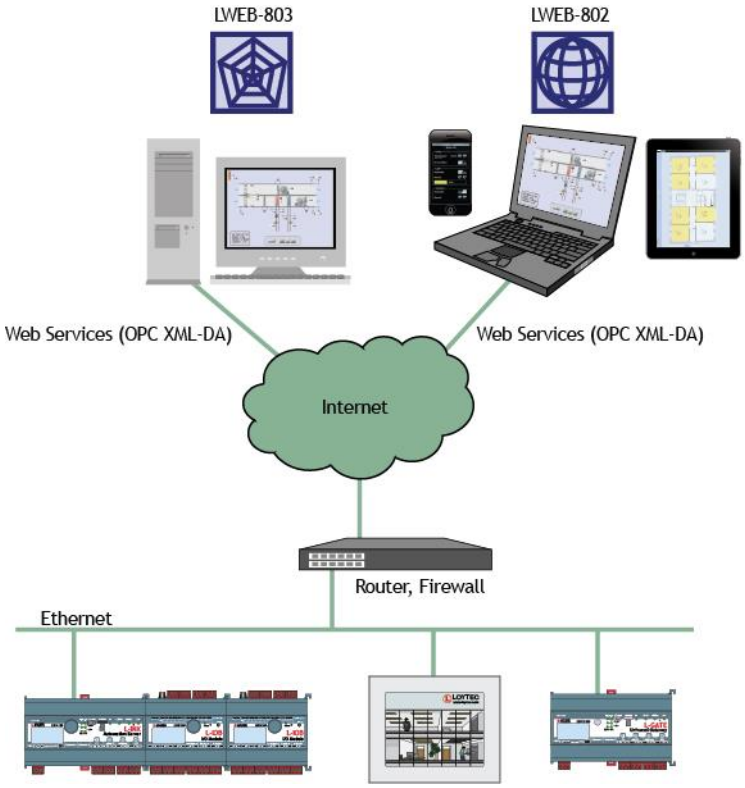
LWEB-802/803

L-WEB™ Distributed Visualization

User Manual

LOYTEC electronics GmbH



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Abbreviations

100Base-T	100 Mbps Ethernet network with RJ-45 plug
AST	Alarming, Scheduling, Trending
BACnet	Building Automation and Control Network
CEA-709	Protocol standard for LONWORKS networks
CEA-852	Protocol standard for tunneling CEA-709 packets over IP channels
CN	Control Network
CN/IP	Control Network over IP
CN/IP Channel	Logic IP channel that tunnels CEA-709 packets according to CEA-852
CN/IP packet	IP packet that tunnels one or multiple CEA-709 packet(s)
COV	Change-Of-Value
CSV	Comma-Separated Values
DHCP	Dynamic Host Configuration Protocol, RFC 2131, RFC 2132
DNS	Domain Name Server, RFC 1034
DST	Daylight Saving Time
GMT	Greenwich Mean Time
IP	Internet Protocol
LINX-10X	Synonym for LINX-100 and LINX-101 Automation Server
LINX-20X	Synonym for LINX-200 and LINX-201 Automation Server
MAC	Media Access Control
MS/TP	Master/Slave Token Passing (this is a BACnet data link layer)
NAT	Network Address Translation, see Internet RFC 1631
NV	Network Variable
SNVT	Standard Network Variable Type
SSL	Secure Socket Layer
XML	eXtensible Markup Language

1 Introduction

1.1 Overview

LWEB-802 and LWEB-803 are graphical user interfaces to operate and monitor building automation systems. They can both display the same graphical project as shown in Figure 1 and Figure 2. LWEB-803 is an application which is installed on a Windows PC. LWEB-802 is a web application which runs in a web browser. Therefore, LWEB-802 is platform independent and can also be executed on Android and iOS devices.

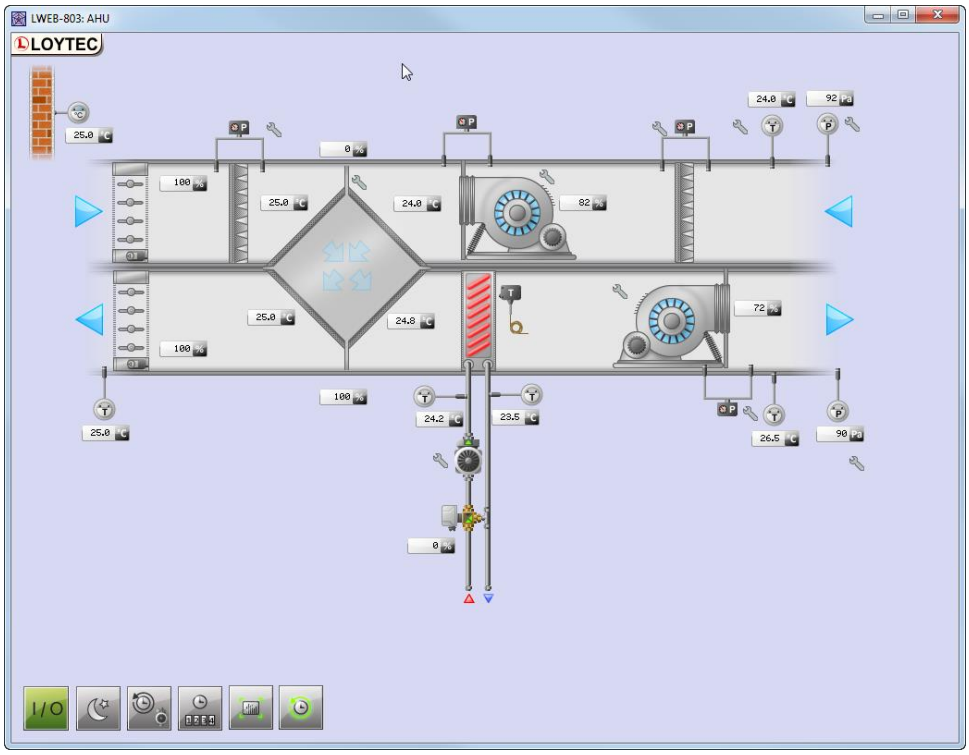


Figure 1: Air handling unit schematics in LWEB-803

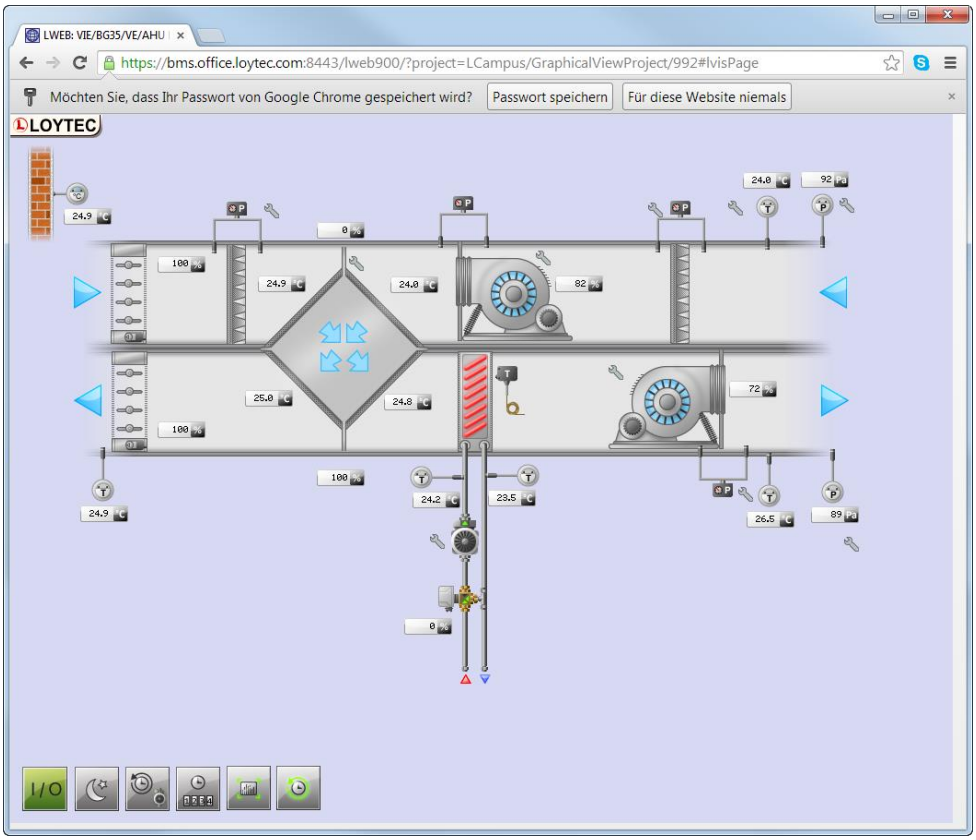


Figure 2: Air handling unit schematics in LWEB-802 using Google Chrome

Both LWEB-802 and LWEB-803 use the standardized OPC XML-DA Web service to communicate with remote LOYTEC devices. For a list of supported devices refer to Chapter 8. The use of Web services allows an easy handling and a smooth communication via the intranet or internet – even across firewalls.

The graphical design of the LWEB-802/803 user interface consists of pages, which can simply be created by using the L-VIS/L-WEB Configurator software without any know-how in HTML, Java, etc. Dynamic information is shown in the form of numeric values, text, changing icons, bar graphs, trend logs, alarm and event lists, or schedule controls.

Common Features:

- Displays customized graphic pages with dynamic content from LOYTEC devices
- Uses Web services (OPC XML-DA) for communication
- Allows links between distributed graphical projects
- Design of graphical projects with the L-VIS Configuration Tool
- Supports different graphical resolutions
- Gives access to automation functions such as Alarming, Scheduling, and Trending (AST™)

LWEB-802 Features:

- Runs in the following web browsers: Google Chrome (recommended), Firefox, Internet Explorer 10-11, Android web browser, iOS web browser

LWEB-803 Features:

- Display pages in Standard, Design, Frameless, or Kiosk View

- Runs on Windows Vista, Windows 7, Windows 8, Windows Server 2003, Windows Server 2008, Windows Server 2012.
- Presence detection: LWEB-803 can be used like an occupancy sensor. As long as there is activity on the PC, LWEB-803 can send out updates on a data point.

1.2 Scope

This document covers the LWEB-802 and LWEB-803 Visualization. It also gives an overview on how to use the L-INX/L-GATE Configurator to create the configuration for a LOYTEC device and the L-VIS/L-WEB Configurator to create an LWEB-802/803 project. A detailed description of the L-INX/L-GATE Configurator can be found in [2], a detailed description of the L-VIS/L-WEB Configurator can be found in [1]. The LWEB-900 Server is covered in [3].

2 What's New in LWEB-802/803

2.1 New in LWEB-802/803 2.1.0

This section describes the major changes and new features. For a full list of changes refer to the Readme file.

System menu

The system menu gives access to the LWEB-802/803 settings and statistics (see Figure 3). This menu can be opened by clicking on the last entry in the navigation menu. Refer to section 5.5 for details.

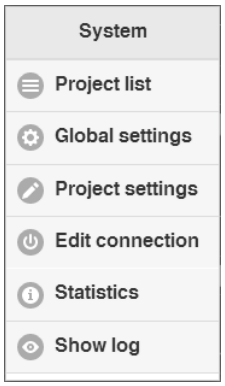


Figure 3: LWEB-802/803 System Menu

View data point details

This new feature needs to be enabled in the project settings (see Figure 4). To view data point details, click with your right mouse button on a control. A context menu is displayed listing the attached data points (see Figure 5). Select the name of the data point for which you want to inspect the properties as shown in Figure 6.

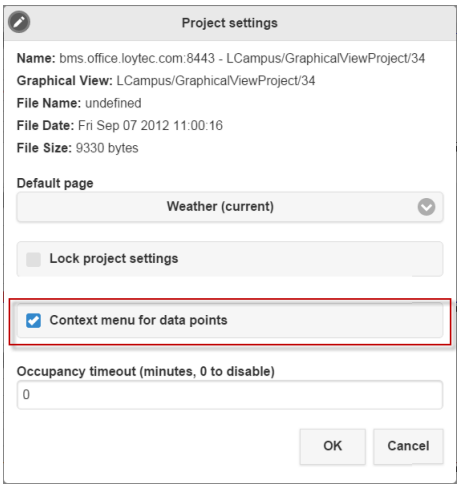


Figure 4: Enable Context Menu for Data Points

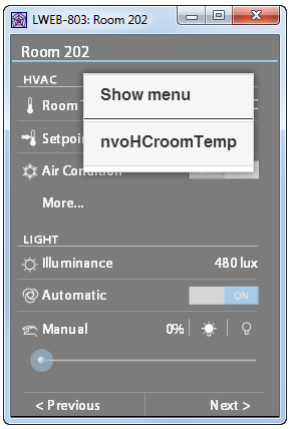


Figure 5: Graphical View Context Menu

nvoHCroomTemp

DataType	double
Value	23.81
Timestamp	2014-11-18T12:20:57.045
Quality	good
EU Type	analog
EU Units	°C
Description	
High EU	327
Low EU	-273
Identification Key	VIEBG35O202HCRCT00GEN00SET00VAL00
Full Path	LINX151-OG2.CEA709 Port.Datapoints.RI2.HC.nvoHCroomTemp
Datapoint Trend charts	
Source	LWEB-900 Server https://bms.office.loytec.com:8443

Figure 6: Data Point Properties

Keypad

The L-VIS/L-WEB Configurator allows defining button size and system colors (see Figure 7). The new LWEB-802/803 version uses those settings when displaying a keypad.

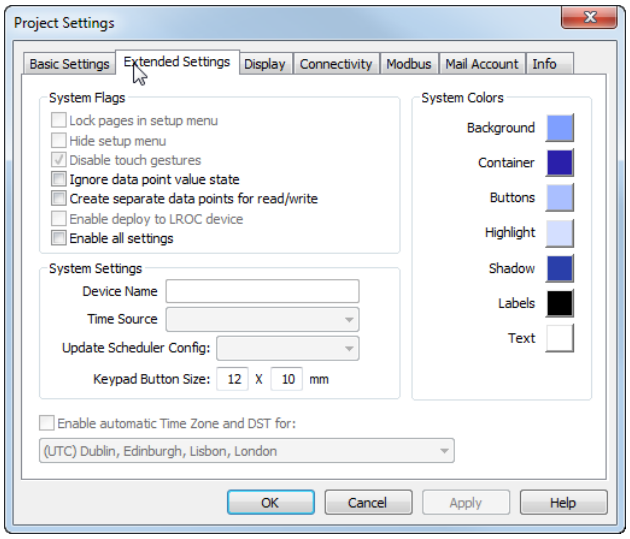


Figure 7: Project Settings in L-VIS/L-WEB Configurator

2.2 New in LWEB-802/803 2.0.0

This section describes the major changes and new features. For a full list of changes refer to the Readme file.

LWEB-803 replaces LWEB-800

LWEB-803 has been developed as a desktop version of the LWEB-802 web application and is based on the same source code. This has the advantage that the behavior of both versions of the visualizations is identical and new features can be implemented faster.

Currently not all LWEB-800 features are supported in LWEB-802/803. The following features are not yet supported:

- Data log control
- Sound support
- Scheduler control: Only the extended UI mode is supported.

Show trend buttons after click in trend control

If the navigation buttons of a trend control are disabled in the L-VIS Configurator (see Figure 8), the buttons will be displayed only after clicking into the control (see Figure 9 and Figure 10) and the cursor is active.

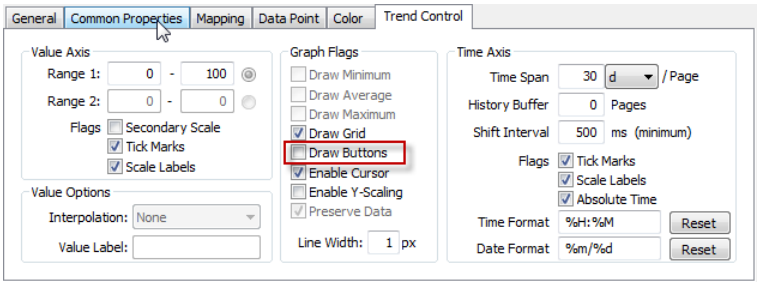


Figure 8: Disable Trend Control Buttons

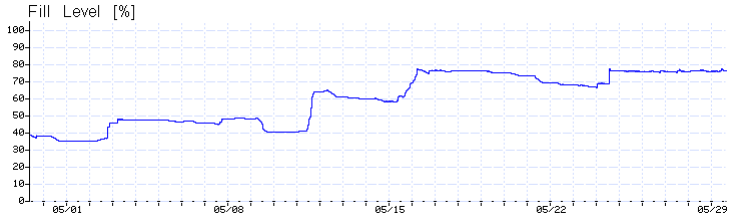


Figure 9: Trend Control without Buttons

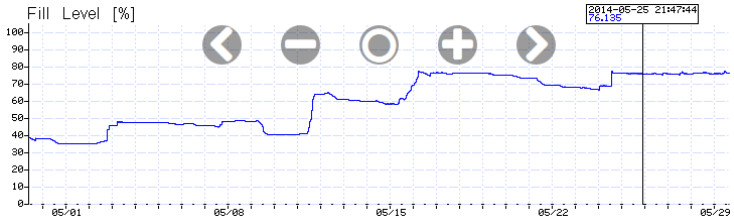


Figure 10: Navigation Buttons appear when clicking into Trend Control

Frameless view

In addition to standard view and design view, LWEB-803 now supports also frameless view. In frameless view no title bar is displayed. In contrast to design view, the background is not made transparent.

Support mouse and touch events at the same time

Some presentation PCs support user input both via mouse and via touch screen. Previous versions ignored touch events if a mouse was present. The current LWEB-802/803 responds to both types of events.

Random function in math objects

LWEB-802/803 supports the new random function “rand()” in math objects.

2.3 New in LWEB-802 1.5.0

This section describes the major changes and new features. For a full list of changes refer to the Readme file.

Analog meter control

LWEB-802 now supports the analog meter control. This control displays a numeric value by a needle moving over a scale, similar to the way a traditional moving-coil ammeter works. Refer to L-VIS User Manual [1] for details.

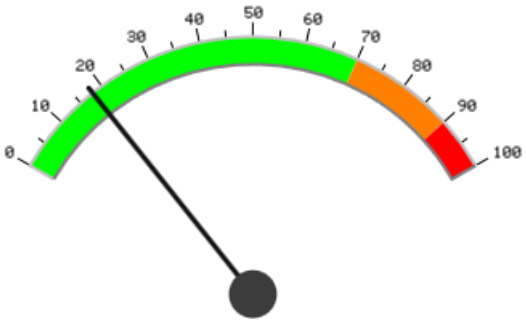


Figure 11: Analog Meter Control

Access specific LWEB-802 version

The latest version of the LWEB-802 web application can be accessed using the following URL:

http://www.loytec.com/lweb802/

If you want to access a specific version of the LWEB-802 web application, add the version number to the end of the URL. In this way you can fix the LWEB-802 version after you have tested your project. For example, to access version 1.4.0, use the following URL:

http://www.loytec.com/lweb802/1.4.0/

True Color Support for MNG Images

Animated MNG images are now displayed in true color instead of with the VGA palette. This feature requires that your LWEB-800/802 project has been saved with the latest version of the L-VIS Configurator.

2.4 New in LWEB-800 1.9.0 and LWEB-802 1.4.0

This section describes the major changes and new features. For a full list of changes refer to the Readme file.

Trend graph improvements:

A number of improvements have been made to the trend control:

- Support a secondary y-axis
- Dynamic scaling of y-axis
- Support limit lines: It is now possible to display the current value of a data point in the trend chart. For the current value of the data point a horizontal line is drawn across the entire graph. This feature can be used to add limit lines to the trend graph.
- Support configuration of line width for trend curves
- Display data point labels in trend log cursor
- Support scaling of trend data

- Improve trend zooming: If cursor is active, zoom relative to current cursor position else relative to center.

- Support linear interpolation for trend log charts

Figure 12 shows an example of a trend log control. On the primary y-axis the room temperature (red) and the temperature setpoint (yellow) are displayed. The heating valve (green) is displayed on the secondary y-axis. Linear interpolation is used to display the room temperature; no interpolation is used for the temperature setpoint and the heating valve. A limit line (white) is displayed at 17°C.

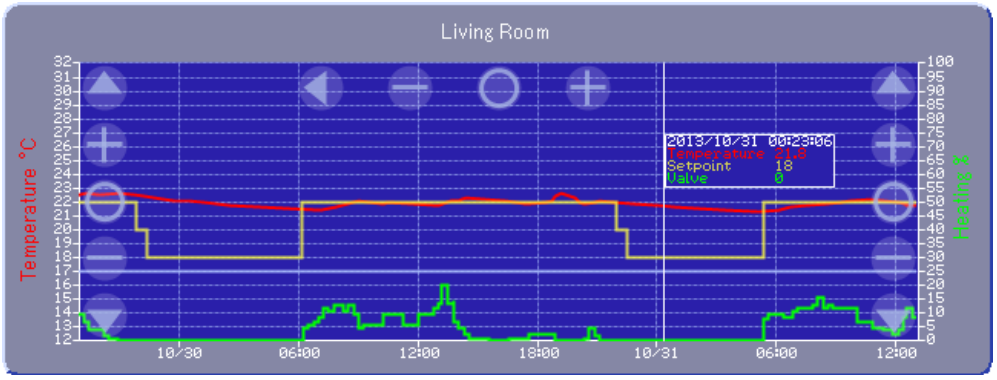


Figure 12: Trend Log Example

IE10 support

LWEB-802 now supports Internet Explorer 10.

Windows 8 support

LWEB-800 now supports Windows 8.

Improve zoom functionality for mobile devices

In LWEB-802 the zoom functionality has been reworked for mobile devices: The zoom operation no longer affects the size of system menus. Zoom and scroll operations no longer interfere with touch events on controls.

MNG support

LWEB-800 supports animated MNG (Multiple Image Network Graphics) images already for some time. Now LWEB-802 can also display animated MNG images. In LWEB-802 MNG images are rendered using the VGA palette instead of true color.

Vector fonts

LWEB-802 supports vector fonts since version 1.3.0. Now LWEB-800 can also display vector fonts.

Occupancy Detection

The occupancy detection of LWEB-800 can now be enabled/disabled for each LWEB-800/802 project separately. Refer to section 7.2 for details.

3 Quick-Start Guide

This Chapter gives step-by-step instructions on how to configure a LOYTEC device and how to use LWEB-802 as well as LWEB-803 by means of a simple example project.

3.1 Overview

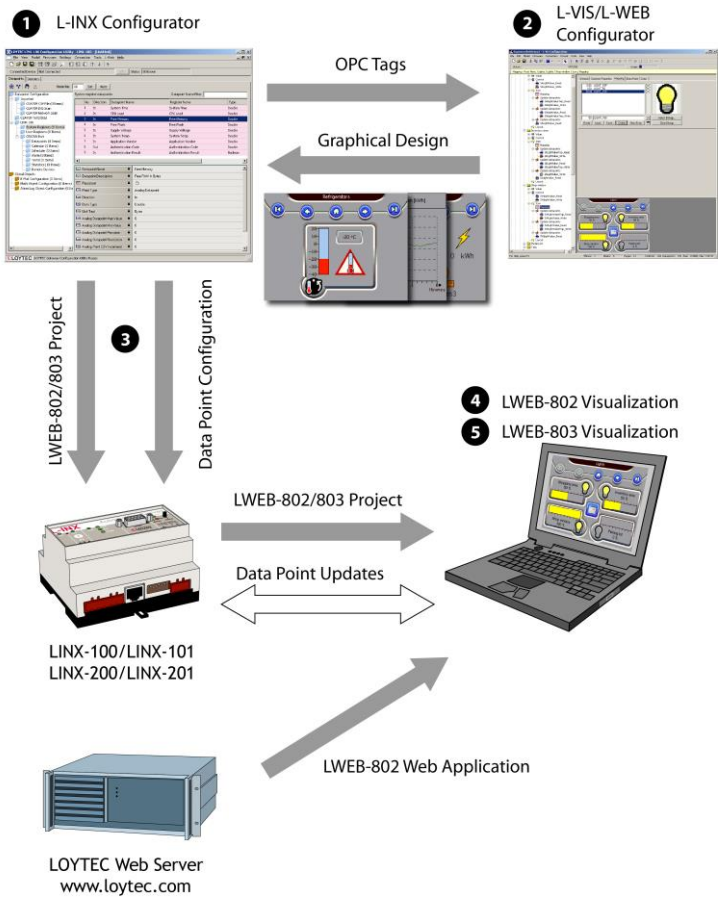


Figure 13: LWEB-802/803 Configuration Steps

Before an LWEB-802/803 project can be designed the following actions have to be performed:

- Install the LOYTEC device and configure the IP address. Refer to the L-INX/L-GATE User Manual [2].

- Install the L-INX/L-GATE Configurator from the setup.exe. This file can be downloaded from www.loytec.com. Refer to the L-INX/L-GATE User Manual [2].

- Install the L-VIS/L-WEB Configurator from the setup.exe. This file can be downloaded from www.loytec.com. Refer to L-VIS User Manual [1]

Figure 13 shows an overview of the basic configuration steps of the quick-start guide:

1) Start L-INX/L-GATE Configurator and create the data point configuration. This step defines the OPC tags which represent data points in the CEA-709 or BACnet network. The OPC tags can be read or written from the LWEB-802/803 application.

2) Start the L-VIS/L-WEB Configurator out of the L-INX/L-GATE Configurator and create graphical user pages. These pages contain graphical representations of the OPC tags created in step 1.

3) Download the data point configuration and the LWEB-802/803 project to the LOYTEC device.

4) Start LWEB-802 in a web browser and display the LWEB-802/803 project.

5) Download the LWEB-803 application from the LOYTEC homepage and install it. Start LWEB-803 and display the same LWEB-802/803 project as in LWEB-802

These basic configuration steps will be described in the next sections by means of a simple example project.

3.2 Data Point Configuration

This quick start tutorial will create a user register and a trend log:

User Register

Select the **User Registers** folder in the tree view, then right click in the data point view and select **New Datapoint…**

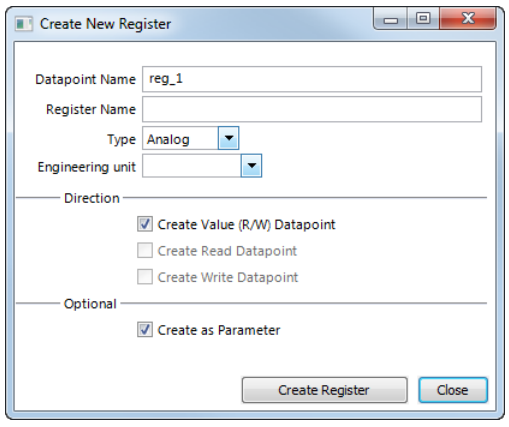


Figure 14: Create new Register

Press the **Create Register** button to generate the data point reg_1.

Trend Log

Select the **Trend** folder in the tree view, then right click in the data point view and select **New Trend…**. Fill out the dialog box as shown in Figure 15. To attach a data point to the trend log, press the **Add…** button and select the **reg_1** register which was created previously.

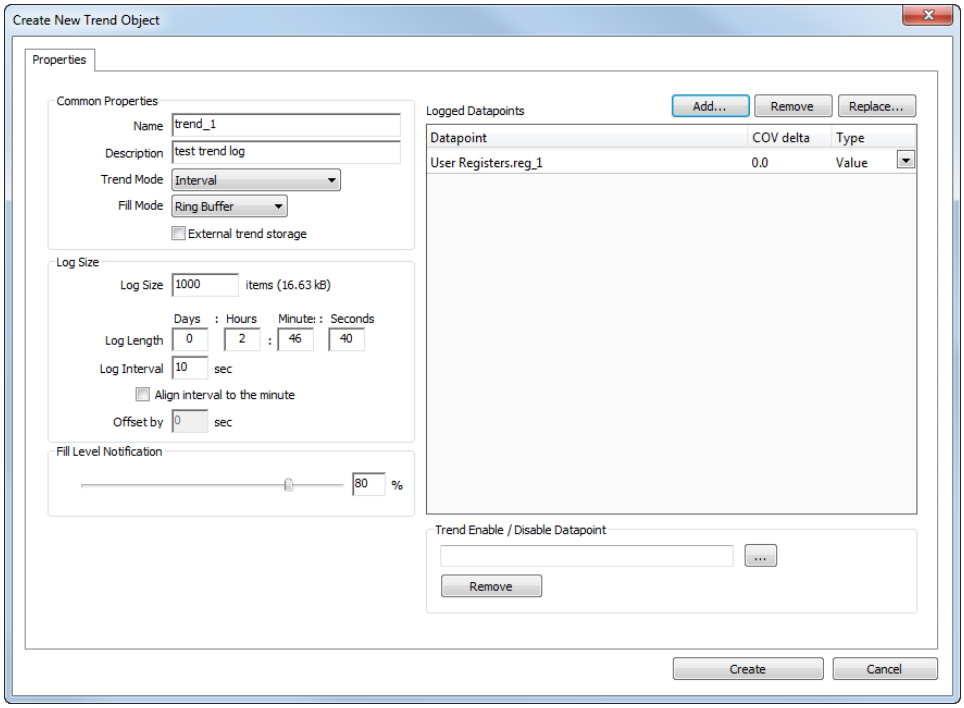


Figure 15: Create New Trend Object

3.3 Graphical Design

The next step is to create an LWEB-802/803 project and to design two simple test pages: The first page will contain a number control to change the **reg_1** data point and a trend control which displays the register. The second page will contain a browser control to display the LOYTEC web site.

Create a new LWEB-802/803 Project

Change to the **L-WEB Projects** tab and click on the **Add New…** button. Make sure that the file type is set to **lweb2**. Enter a name for the project and click on the **Create and Design Graphics** button (see Figure 16). The L-VIS/L-WEB Configurator opens in a new window.

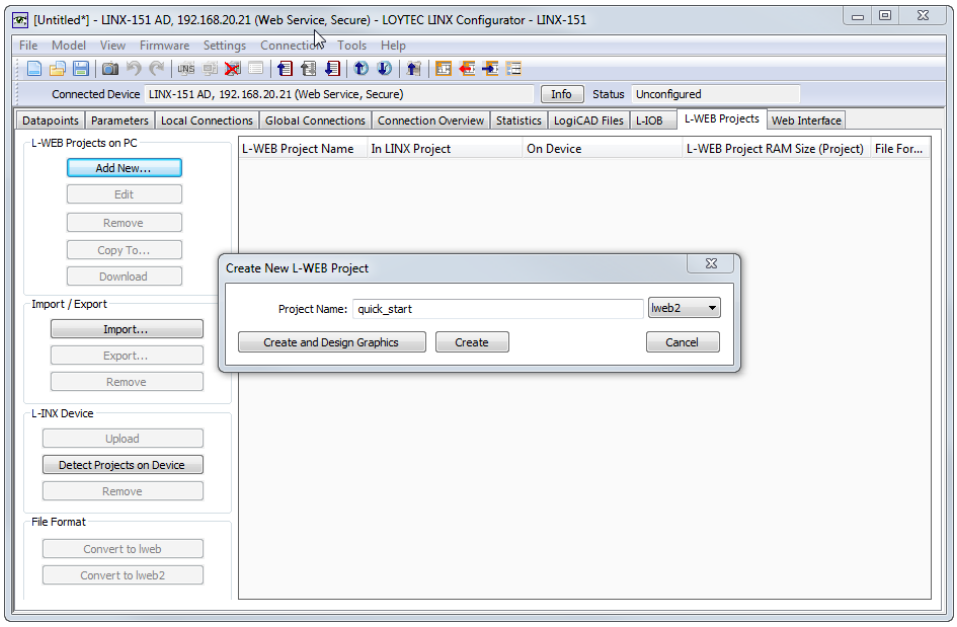


Figure 16: Create new LWEB-802/803 Project

Project Settings

The size of the LWEB-802/803 Visualization display can be changed in the menu **File → Project Settings…** on the **Display** tab as shown in Figure 17.

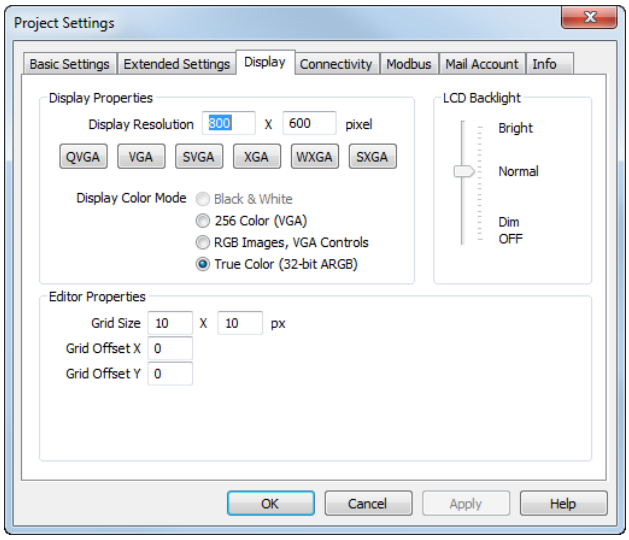


Figure 17: Project Settings, Display Tab

The communication parameters can be changed on the **Connectivity** tab as shown in Figure 18. For projects with many data points it is recommended to increase the Pollcycle.

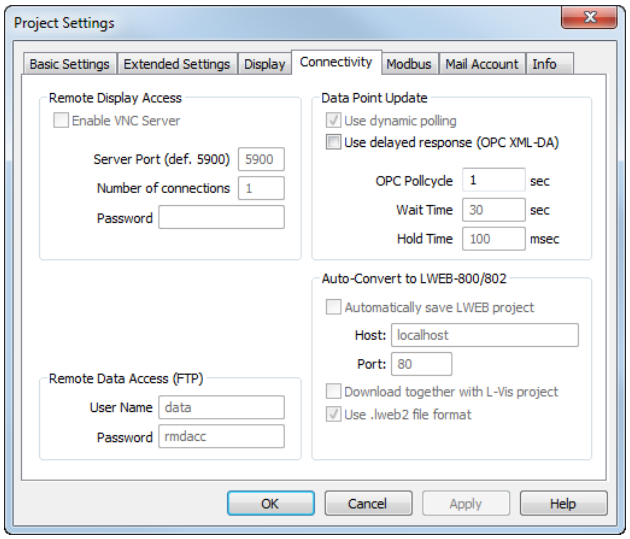


Figure 18: Project Setting, Connectivity Tab

Create menu item and pages

The empty project shows the root menu with no entries (menu items). First, add a menu item to the root menu. To do this, right click on the root menu object in the tree view and select **Add Item** from the context menu. A new **menu item** is created and connected to the menu object. Next, add a page to the menu item. This page will be displayed when the user selects the menu item from the root menu. Open the context menu of the menu item (right click on the item in the tree view) and select **Add Page.**

In order to see **Page 1** of **Menu Item 1** right after the device starts, make this page the projects default page. Open the context menu of **Page 1** in the tree view and select **Set as Default**. Add a second page to **Menu Item 1**. The tree view should now look like shown in Figure 19.

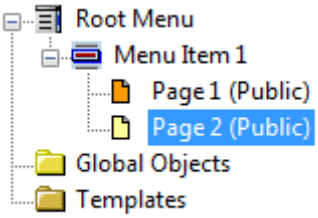


Figure 19: Tree view after creating menu item with pages

Create page navigation

To be able to navigate from **Page 1** to **Page 2**, we add a bitmap control and attach a **Next page** action. Right-click on the **Page 1** object in the tree view and choose **Add Bitmap** from the context menu. On the **Common Properties** tab (see Figure 20), press the **Select…** button and choose an appropriate bitmap from the LOYTEC icon library (C:\Program Files\LOYTEC\L-Vis Configuration\Icon Library\Grafix\Icons).

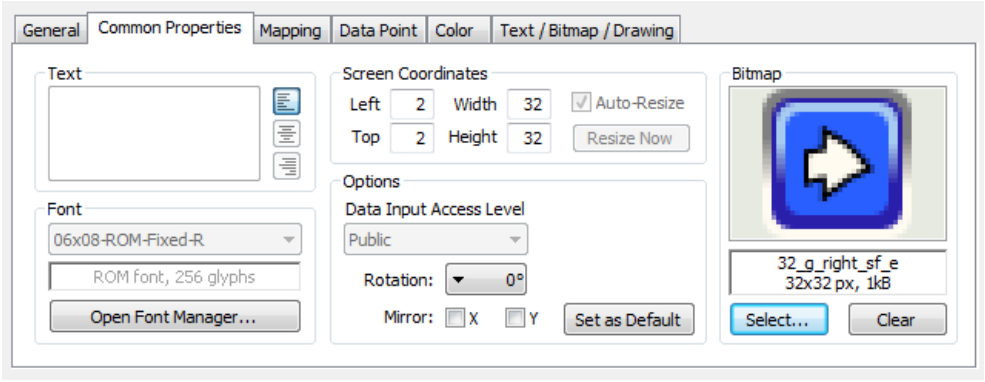


Figure 20: Common properties tab of a bitmap control

To attach an action to the bitmap control, select **Add Action** from the controls context menu in the tree view. On the **Action** tab, select the **Next page** action as shown in Figure 21.

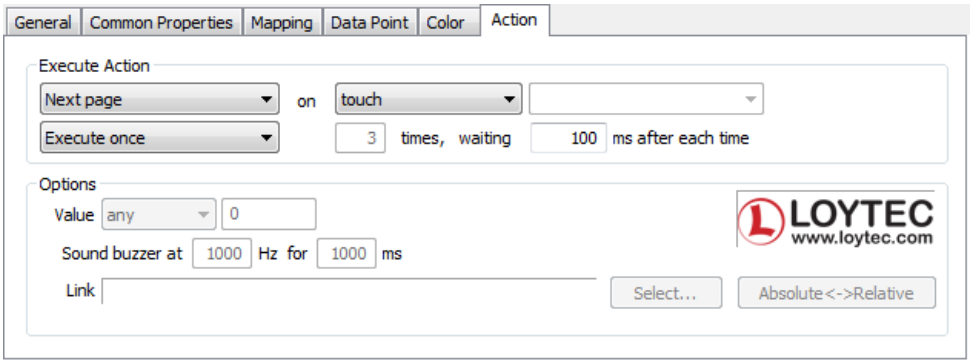


Figure 21: Action tab

To be able to navigate from **Page 2** back to **Page 1**, add a bitmap control to **Page 2** with the action **Prev page**. The tree view should now look like shown in Figure 22.

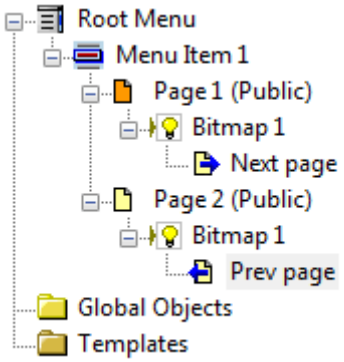


Figure 22: Tree view after creating page navigation

Create number control

The next step is placing a number control on **Page 1** to be able to change the value of **reg_1**. To create the number controls, right-click on the page object in the tree view and choose **Add Control → Number** from the context menu. To connect the **reg_1** data point to the number control, select **Add Data Point…** from the controls context menu. A dialog will appear which is used to manage and select data points. Select the folder **User Registers**

from the tree view at the left of the dialog. Select **reg_1** and press **Select**. To be able to change the value of the data point it is necessary to change the direction from input to output. Therefore, activate the checkbox **Reverse direction** as shown in Figure 23.

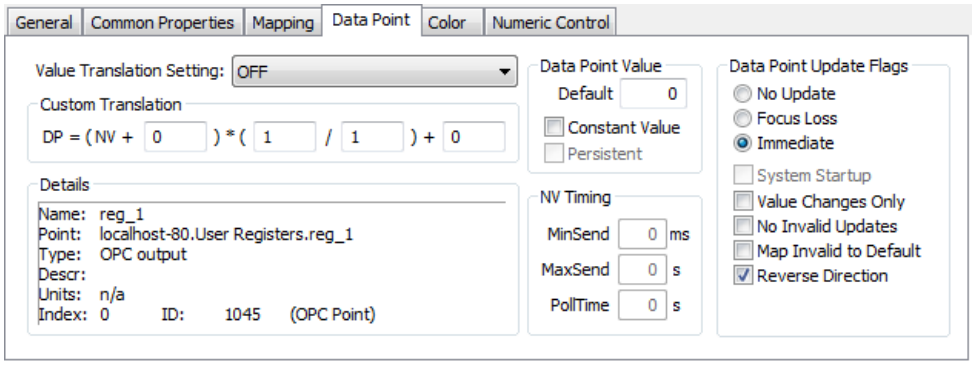


Figure 23: Reverse direction of a data point

Create trend control

To create the trend controls, right-click on the page object in the tree view and choose **Add Control → Trend** from the context menu. To connect a data point to the trend control, select **Add Data Point…** from the controls context menu. A dialog will appear which is used to manage and select data points. Select the folder **Trend** from the tree view at the left of the dialog. There should be one element **trend_1** and a plus symbol in front of it. Click on the plus symbol to show the data points attached to the trend control. Select **reg_1** and press **Select**.

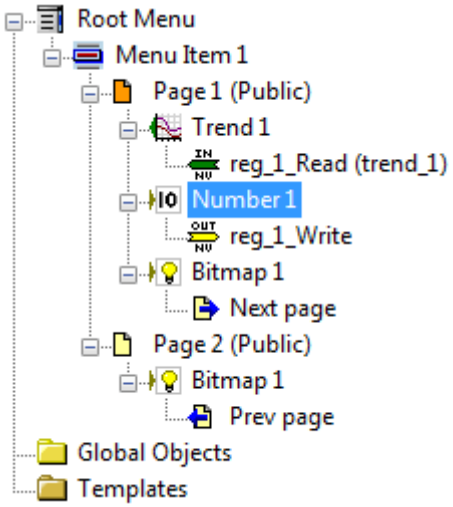


Figure 24: Tree view after creating number control and trend control

Now position the controls on your page so that they do not overlap each other. Grab and drag them with the mouse. To resize the controls with the mouse, move the pointer to the lower right corner of the controls area in which the value is displayed: Disregarding any decorations around the value area, like the scale of the trend control. Then grab the control at the lower right corner of the container area.

Your preview window should now look similar to Figure 25.

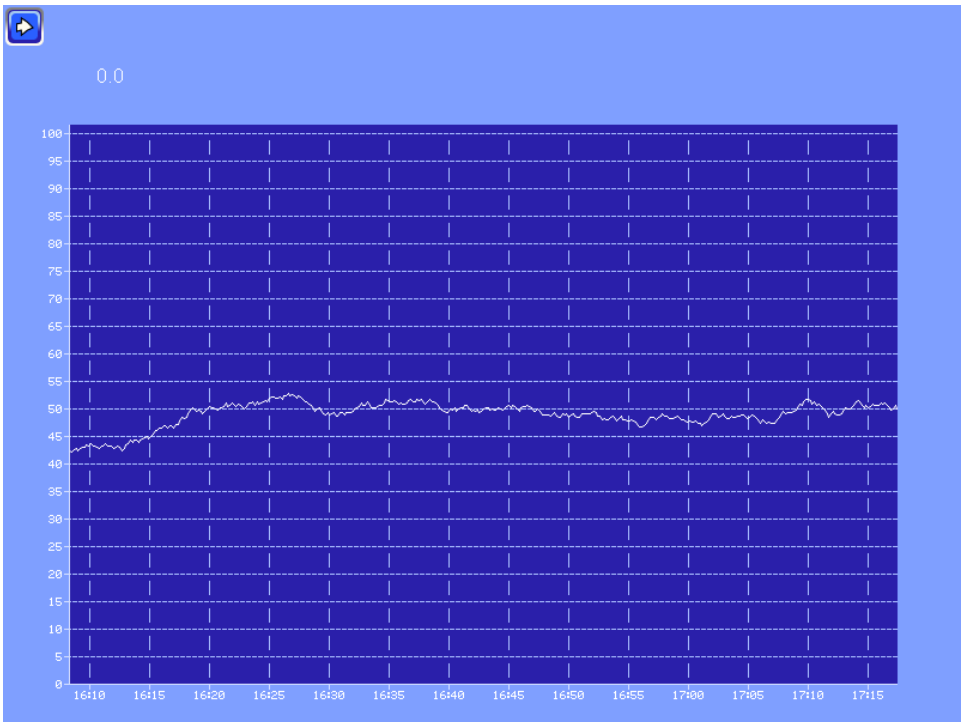


Figure 25: Preview of first page

Create browser control

Now we will add a browser control to the second page. A browser control is a special form of a text control. To create a browser control, right-click on the page object in the tree view and choose **Add Control → Text** from the context menu. Enter www.loytec.com in the **Text** input field on the **Common Properties** tab. Deselect **Auto-Resize** and resize the control so that it uses the space below the **Prev page** button. On the **Text/Bitmap/Drawing** tab select the **Web Browser Mode (URL, <body>, or <html>).**

Your preview window should now look similar to Figure 26.

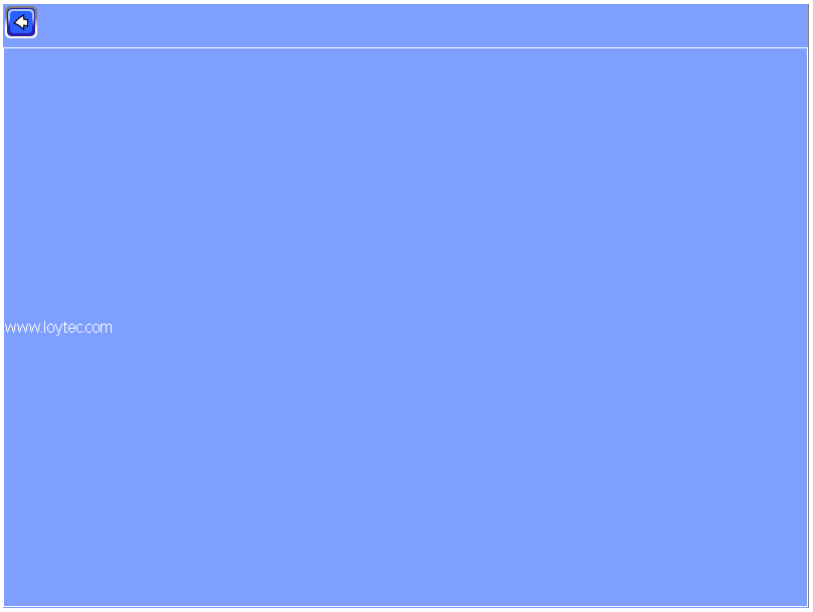


Figure 26: Preview of second page

Close the L-VIS/L-WEB Configurator tool and select **Yes** in the displayed dialog to update the design with the current project.

3.4 Download Configuration

Back to the L-INX/L-GATE Configurator, the **L-WEB Projects** tab looks as shown in Figure 27. The LWEB-802/803 project **quick_start** is stored in the L-INX project but not yet downloaded to the device.

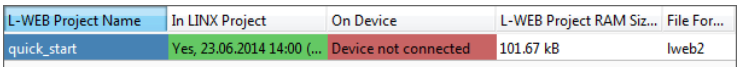


Figure 27: LWEB-802/803 Project tab with quick_start project not on device

To download the data point configuration and the LWEB-802/803 project we first need to connect to the device. For this example we will connect as shown in Figure 28.

Figure 28: Connect to LOYTEC device

Download the data point configuration as shown in Figure 29.

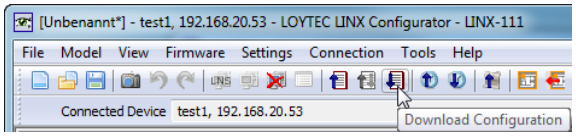


Figure 29: Download data point configuration

Per default the **Download Configuration** button also downloads the LWEB-802/803 project. If you have set up your L-INX/L-GATE Configurator to download LWEB-802/803 project separately, press the **Download** button as shown in Figure 30.

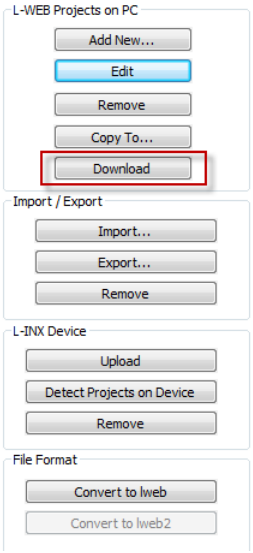


Figure 30: Download LWEB-802/803 project

The **L-WEB Projects** tab now looks as shown in Figure 31.

L-WEB Project Name	In LINX Project	On Device	L-WEB Project RAM S...	File For...
quick_start	Yes, 23.06.2014 14:03 (1...	Yes, 23.06.2014 14:03 (1...	101.67 kB	lweb2

Figure 31: LWEB-802/803 project tab with quick_start project on device

3.5 Start LWEB-802 Visualization

To start the LWEB-802/803 project in a web browser, go to go to the L-WEB page on the LOYTEC device and click on the LWEB-802 icon beside the project (see Figure 32).

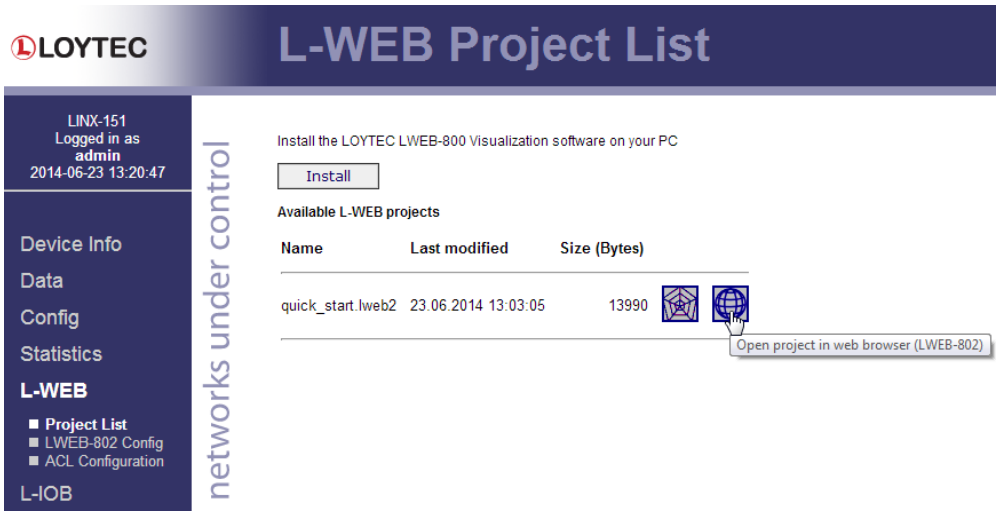


Figure 32: Start LWEB-802 from device web UI

To start the LWEB-802/803 project in the web broser (LWEB-802) you need access to the LOYTEC web server. If you do not have internet access, you can copy the LWEB-802 web application to your local network (refer to section 5.2).

The first page of the project is shown in Figure 33. If you change the value of **reg_1_Write**, the trend control will be updated.

Figure 34 shows the second page of the project. In the quick start demo project we used the LOYTEC website as an example for the browser control. However, the browser control is mainly intended to integrate web cams into an LWEB-802/803 project.

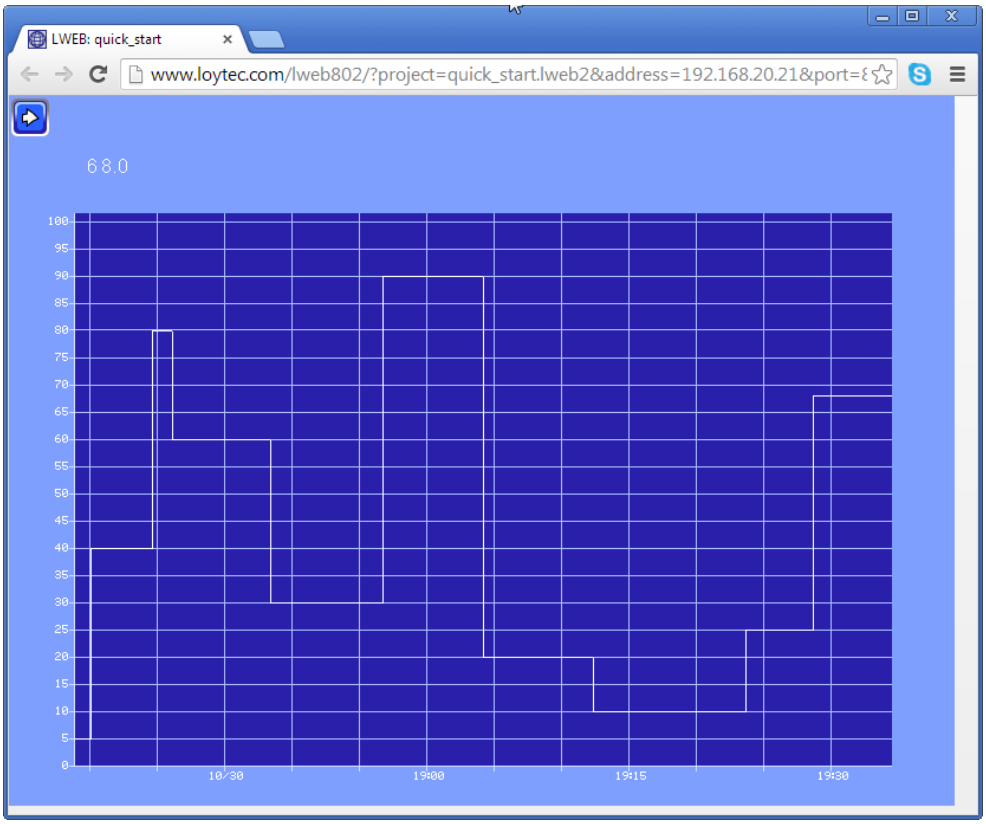


Figure 33: Quick Start Project, First Page

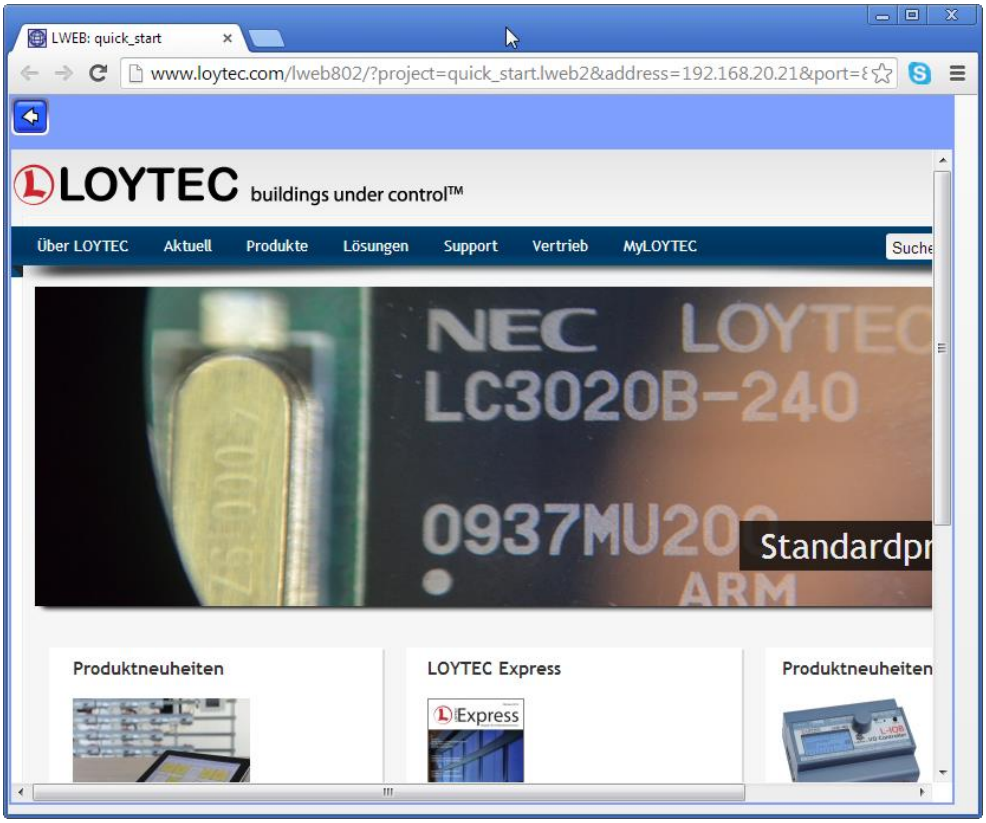


Figure 34: Quick Start Project, Second Page

3.6 Install and Start LWEB-803 Visualization

The LWEB-803 software can be downloaded from the LOYTEC Web site http://www.loytec.com. To install the LWEB-803 software on your PC, run the setup program and follow the instructions of the installation wizard.

After installing the software you have to add your LWEB-802/803 project to the project list. Click on the entry **New project…** to open the **New Connection** dialog (see Figure 35). In the drop-down box **Location** select **Device**. Enter the IP address and port of your device. The default password for LOYTEC devices is '**operator'**. The operator password can be changed on the Web UI of the device as shown in Figure 36.

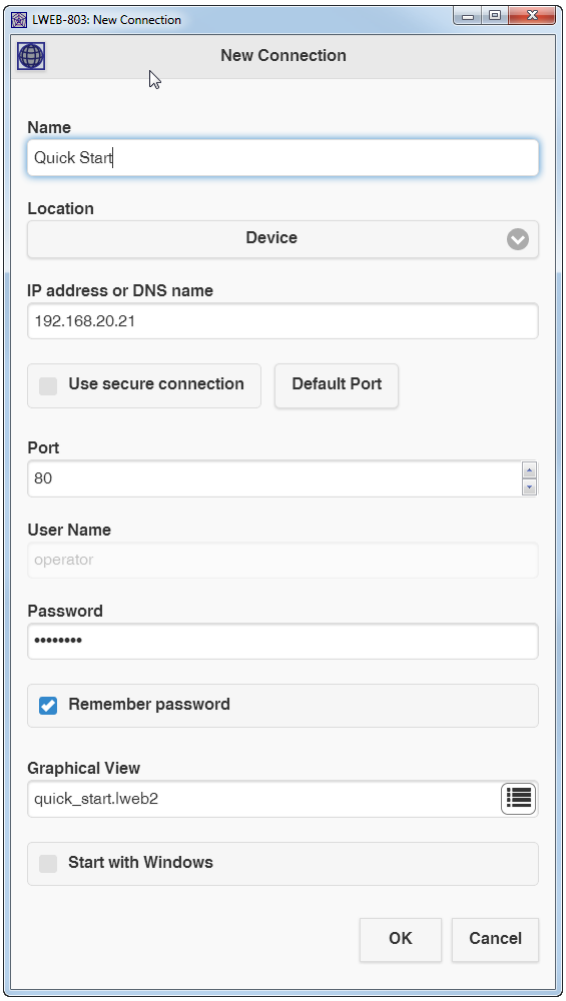


Figure 35: LWEB-803 Visualization, New project

Figure 36: Change “operator” password

4 Network Infrastructure

Figure 37 shows a typical network infrastructure in a building. The LWEB-802/803 Visualization software is installed on the office PCs and used for room control. The office PCs access the office IP network. The LOYTEC devices and the LWEB-900 server reside in the building management network. In order that LWEB-802/803 can access the devices on the building management network, a router is required.

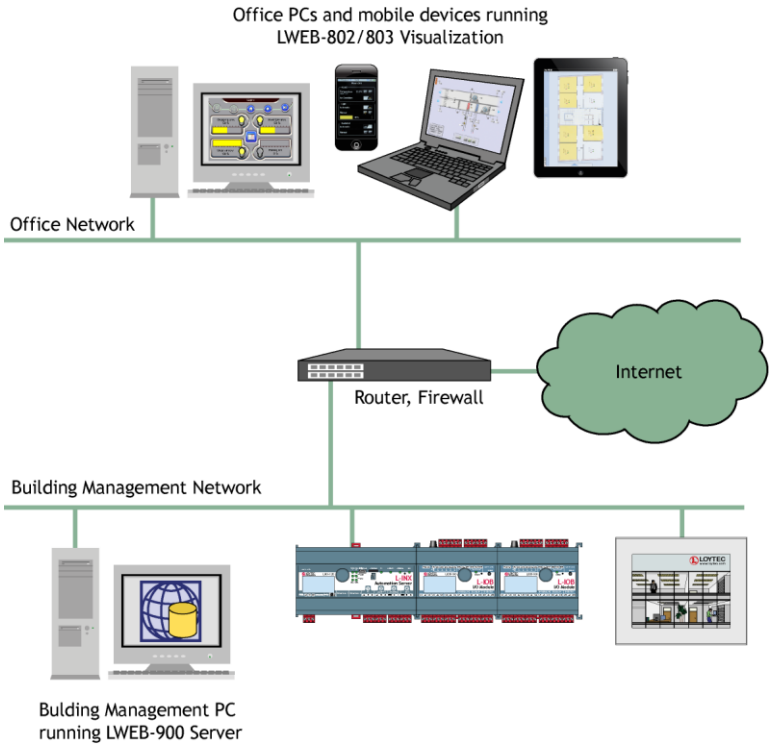


Figure 37: Typical Network Infrastructure

5 LWEB-802

5.1 Start LWEB-802

The current version of the LWEB-802 web application can be accessed using the following URL:

http://www.loytec.com/lweb802/

If you want to access a specific version of the LWEB-802 web application, add the version number to the URL. In this way you can fix the LWEB-802 version after you have tested your project. For example, to access version 1.4.0, use the following URL:

http://www.loytec.com/lweb802/1.4.0/

LWEB-802 displays a list of available LWEB-802/803 projects. When starting LWEB-802 for the first time this list is empty. Projects can be added by clicking on **New projects** (see section 5.3)

Alternatively, an LWEB-802/803 project can be started directly from the Web UI of a device as shown in Figure 38.

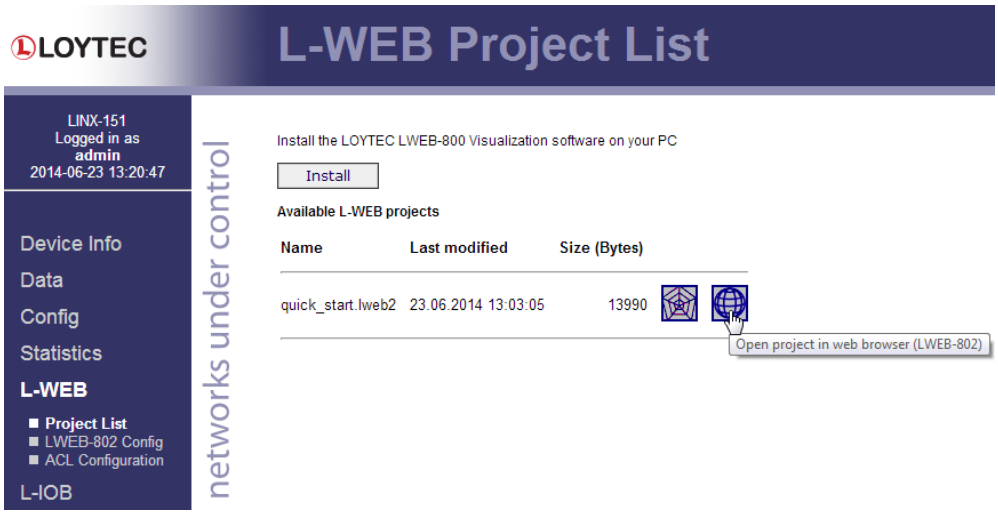


Figure 38: Start LWEB-802 from device web UI

LWEB-802 is an HTML5 application. Therefore, Java Script needs to be enabled in the web browser. LWEB-802 uses web services (OPC XML-DA) to exchange real-time data with LOYTEC device. Per default port 80 is used.

5.2 LWEB-802 without Internet Access

If no Internet access is available, the LWEB-802 web application has to be hosted by a local web server. Some LOYTEC devices (refer to Chapter 8) can act as local web server. Perform the following steps to place the LWEB-802 application on a LOYTEC device:

Download LWEB-802 from LOYTEC homepage

Go to the LOYTEC homepage (www.loytec.com) and select **Support → Download**. Select the LWEB-802 product and download the application zip archive.

Transfer LWEB-802 application to LOYTEC device

Unzip the LWEB-802 archive on your local PC and use FTP to download the contents of the folder **www** to the following directory of the LOYTEC device.

```
ftp://<device ip address>/../../srv/www/lweb802/
```

Use the **admin** account (default password **loytec4u**) to log in.

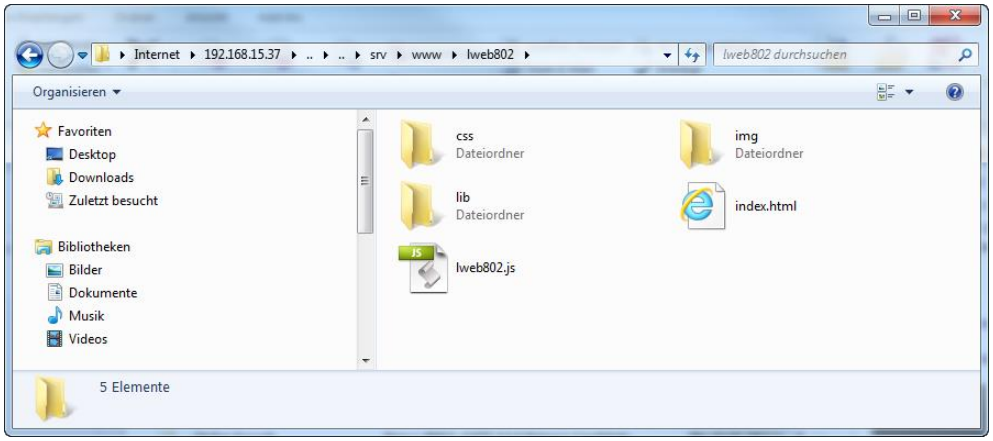


Figure 39: Transfer LWEB-802 application to LOYTEC device

Configure LWEB-802 URL on LOYTEC device

This step is necessary to start LWEB-802 directly from the Web-UI of a device. On the device Web UI go **to L-WEB → LWEB-802 Config** and configure the new URL in the following format:

```
http://<device ip address>/lweb802/
```

Figure 40: Configure LWEB-802 URL

5.3 Project List

The project list is a convenient way to access LWEB-802/803 projects (see Figure 41).

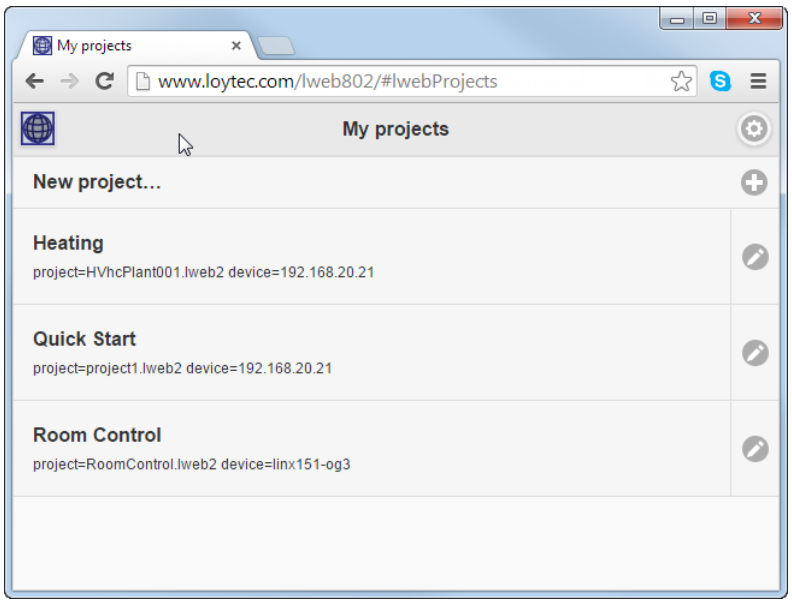


Figure 41: LWEB-802/803 project list

The project list offers the following functionality:

- **Display project**: Click on the name of an LWEB-802/803 project in the list to start the project.
- **Add new project**: Click on the entry **New project…** to add a new project, The **New Connection** dialog is opened (see Figure 42).
- **Edit project**: To edit an existing project, click on the edit icon beside the name. The edit dialog allows changing the connection settings or deleting the project.

- **Global settings**: The global application settings can be changed by clicking on the gear icon in the top right corner. For detailed information about the global settings refer to section 5.4.

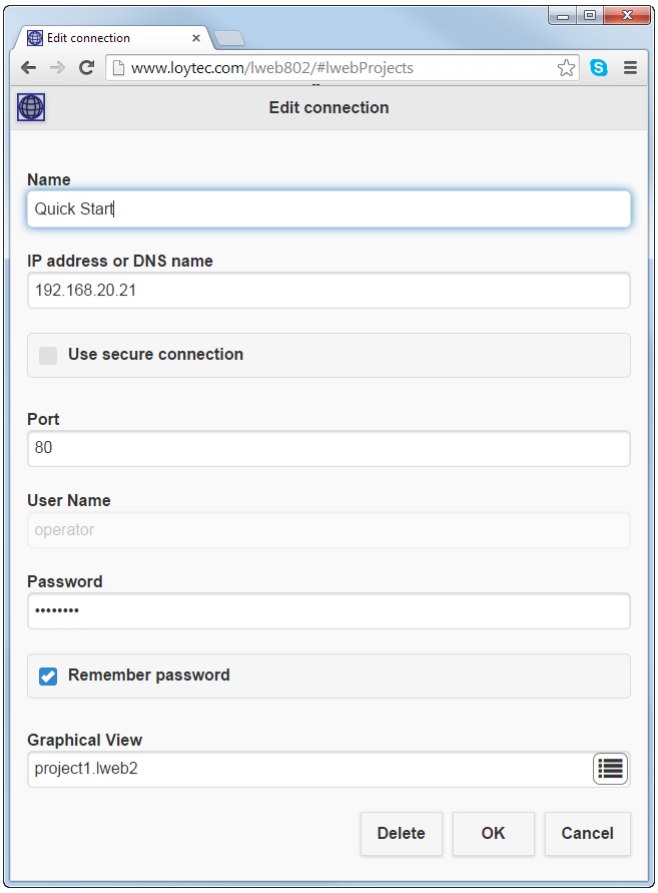


Figure 42: LWEB-802 new/edit connection

5.4 Global Settings

Global settings contain all settings which apply to all LWEB-802/803

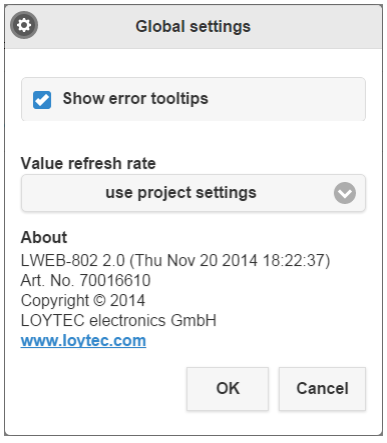


Figure 43: LWEB-802/803 global settings

The **Global settings** dialog as shown in Figure 43 contains the following settings:

- **Show error tooltips**: If this checkbox is set a tooltip is displayed showing the OPC error when hovering over a grayed-out control. See also section 5.7.

- **Value refresh rate**: This setting defines how often data point values are updated in LWEB-802. The default setting is **use project settings**.

5.5 Navigation Menu and System Menu

The navigation menu is opened by one of the following actions in the main window:

- Left click and hold: The left click and hold operation opens the navigation menu after the time configured in the L-VIS/L-WEB Configurator. Please note that for correct operation, the left click and hold action should be executed on a free spot on the display. If the area of an input control is clicked, the control enters input mode and all further input is processed by the control.

- Right click: A right click has the same effect as a left click and hold operation. It is not available on touch displays.

Figure 44 shows an example of the LWEB-802/803 navigation menu.

Figure 44: LWEB-802/803 navigation menu

The navigation menu displays the menu items which were defined in the L-VIS/L-WEB configurator and the "System" entry to open the LWEB02/803 system menu shown in Figure 45.

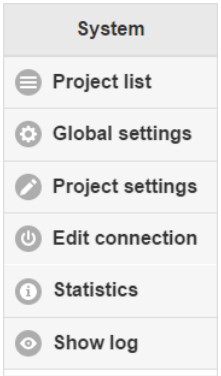


Figure 45: LWEB-802/803 System Menu

The system menu give access to the following LWEB-802/803 functionality:

- Project list: Refer to section 5.3.
- Global settings: Refer to section5.4.
- Project settings: Refer to section 5.6.
- Edit connection: Edit the connection parameters.
- Statistics: Refer to section 5.8.
- Show log: Refer to section 5.9.
- Refresh values: This icon is displayed only if **manual only** is selected as update method in the global settings. Clicking on this icon performs a manual refresh of the data point values.

5.6 Project Settings

This dialog contains all project specific settings.

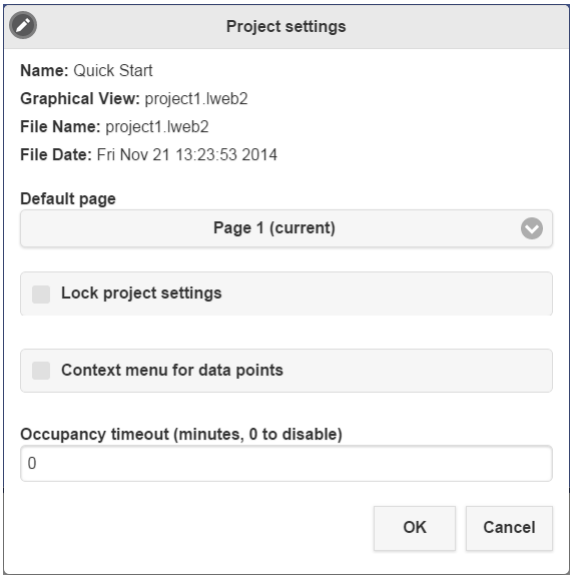


Figure 46: LWEB-802/803 project settings

- **Default page**: If the LWEB-802/803 project file contains multiple pages the default page which is displayed when starting LWEB-802/803 Visualization can be selected from this drop-down list.
- **Lock project settings**: If this checkbox is enabled, LWEB-802/803 will request a PIN code before opening the project settings dialog. In addition no menu entries will be displayed in the navigation menu. This feature can be used for example to setup a project with multiple pages where each page controls an office room. The

default page for each user is set to the room in which he is located and then the menu is disabled. This way each user can control only the own room.

The PIN codes can be configured in the L-VIS/L-WEB Configurator using the menu **File → Project Settings** (see Figure 47). Press the Button **Setup Pin Codes…** to open the **Access Codes** Dialog and set the PIN code for Level 15 (see Figure 48).

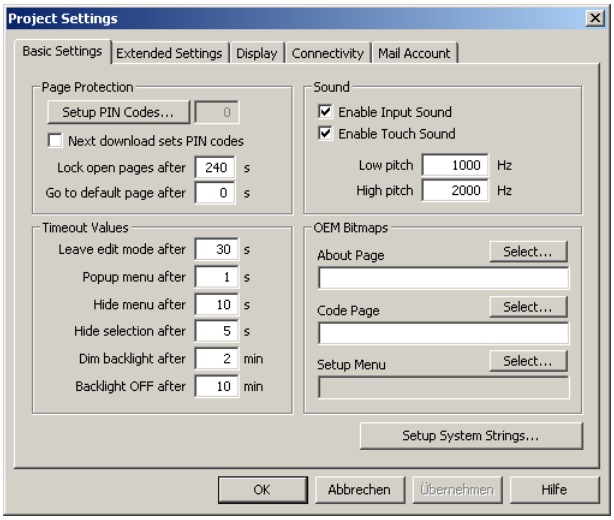


Figure 47: L-VIS/L-WEB Configurator, Project Settings

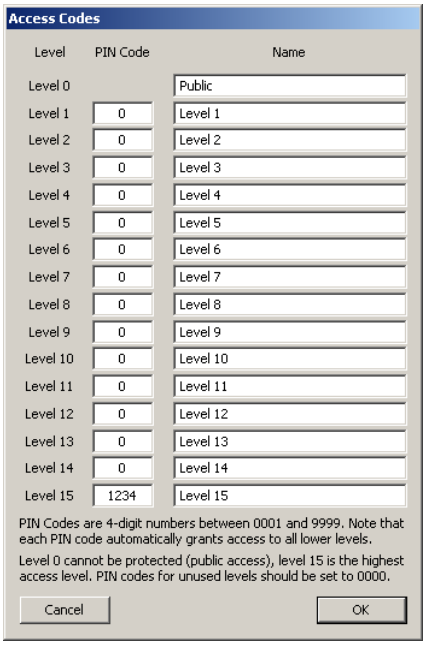


Figure 48: L-VIS/L-WEB Configurator, Access Codes

- **Context menu for data points:** If this checkbox is enabled, you can click with your right mouse button on a control to view data point details. A context menu is displayed listing the attached data points (see Figure 49). Select the name of the data point for which you want to inspect the properties as shown in Figure 50.

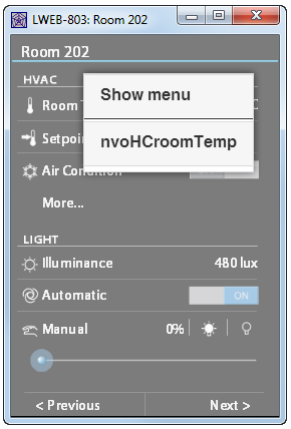
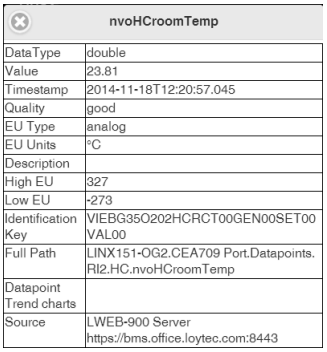


Figure 49: Data Point Context Menu



nvoHCroomTemp

DataType	double
Value	23.81
Timestamp	2014-11-18T12:20:57.045
Quality	good
EU Type	analog
EU Units	°C
Description	
High EU	327
Low EU	-273
Identification Key	VIEBG35O202HCRCT00GEN00SET00VAL00
Full Path	LINX151-OG2.CEA709 Port.Datapoints.RI2.HC.nvoHCroomTemp
Datapoint Trend charts	
Source	LWEB-900 Server https://bms.office.loytec.com:8443

Figure 50: Data Point Details

- **Occupancy timeout:** This setting applies only to LWEB-803. Refer to section 6.4 for details.

5.7 Error Handling

If a control does not receive data from the LOYTEC device the control will be grayed out. If tooltips for error messages are enabled the OPC error message will be displayed when hovering over the control as shown in Figure 51.

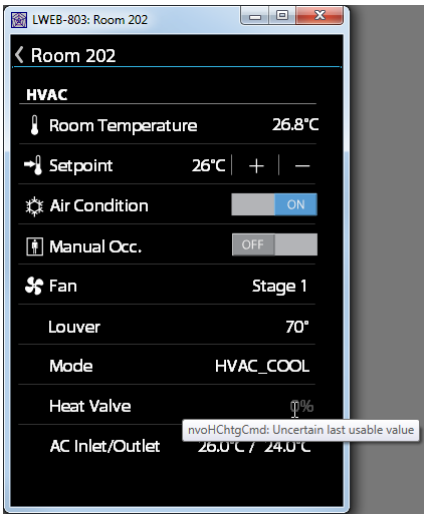


Figure 51: Tooltip to report error

5.8 Statistics

The **Statistics** dialog displays communication statistics from all LOYTEC devices which are currently used in the LWEB-802/803 project (see Figure 52).

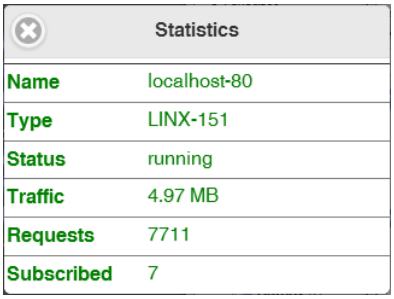


Figure 52: LWEB-802/803 Statistics

5.9 System Log

The system log records all LWEB-802/803 activities. When reporting a LWEB-802/803 problem to LOYTEC, it is recommended to save the system log and attach it to the e-mail describing the problem. This will speed-up problem analysis.

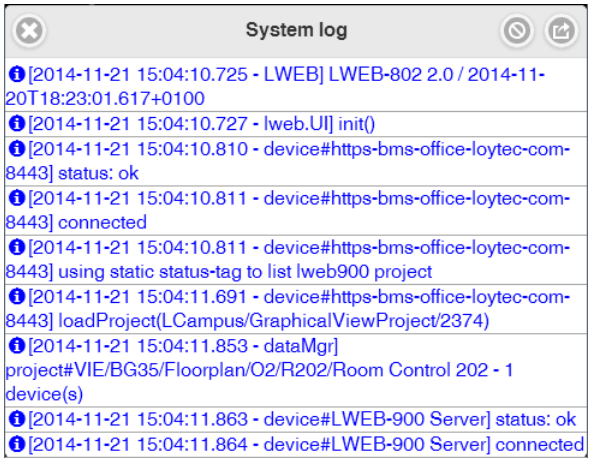


Figure 53: LWEB-802/803 system log

6 LWEB-803

LWEB-803 is the desktop version of LWEB-802. It offers the following additional features:

- System tray icon
- Start automatically when Windows is started
- Presence detection
- Standard, Design, Frameless view
- Kiosk mode

6.1 Installation

The LWEB-803 software can be downloaded from the LOYTEC Web site http://www.loytec.com. To install the LWEB-803 software on your PC, run the setup program and follow the instructions of the installation wizard.

6.2 System Tray Icon

When LWEB-803 Visualization is running, a system tray icon is displayed. When hovering the cursor over the icon, the project name is displayed.

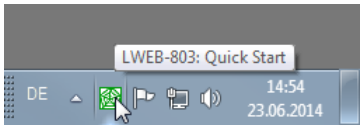


Figure 54: LWEB-803 System Tray Icon

Right clicking on the system tray icon brings up the LWEB-803 Visualization menu.

6.3 LWEB-803 Visualization Menu

To open the LWEB-803 Visualization menu, right-click on the system tray icon or on the title bar of the LWEB-803 main window.

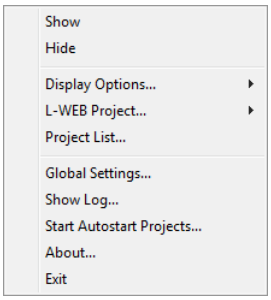


Figure 55: Context menu of system try icon

The LWEB-803 Visualization menu is shown in Figure 55. The menu contains the following entries:

- **Show:** Show the LWEB-803 Visualization main window.
- **Hide:** Hide the LWEB-803 Visualization main window.
- **Display Options:** These options affect the display of the main window:
  - **Design View:** In design view the main window will be displayed without a title bar and with a transparent background. See also section 6.6.
  - **Frameless View:** In frameless view the main window will be displayed without a title bar. See also section 6.6.
  - **Kiosk Mode [Ctrl+Enter]:** In kiosk mode, the user can only access the LWEB-803 main window but not the Windows desktop or other applications. When LWEB-803 is switched into kiosk mode, the main window comes to the front and covers the whole screen. Shortcuts to access other applications (e.g. Alt+Tab) are blocked. Use the key combination Ctrl+Enter to leave kiosk mode. See section 6.7 for details.
  - **Stay On Top:** If the LWEB-803 main window is displayed, display it on top of all other windows.
  - **Zoom:** Select the zoom level of the main window.
- **L-WEB Project:**
  - **Goto Default Page:** In the **Project Settings** dialog, a default page can be configured (see section 5.6). When **Goto Default Page** is selected, the LWEB-803 main window will display the configured default page.
  - **Reload Project:** Reloads the current LWEB-802/803 project from the LOYTEC device. Use this option after you have downloaded a new project to the device.
  - **Project Settings:** Configure the LWEB-802/803 projects. Refer to section 5.6 for a detailed description.
  - **Statistics:** Displays a window showing statistics for communication with LOYTEC devices and LWEB-900 Server. Refer to section 5.8 for a detailed description.
  - **Edit Connections**: Edit connection settings.
  - **Create Desktop Shortcut:** Create a shortcut on the desktop which will start the LWEB-803 Visualization with the configured parameters.

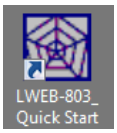


Figure 56: LWEB-803 Shortcut

  - **Start Project with Windows:** If this option is selected, the LWEB-803 Visualization will start the selected project automatically when the PC is started.

- **Global Settings:** Configure the LWEB-803 Visualization application. Refer to section 5.4 for a detailed description.
- **Show Log:** Displays log messages (see section 5.9).
- **Start Autostart Projects:** Start all projects for which **Start Project with Windows** is active
- **About:** Display LWEB-803 version
- **Exit:** Exit LWEB-803 Visualization.

6.4 Occupancy Detection

Occupancy detection is supported only for LWEB-803, not for LWEB-802. LWEB-803 has an internal system data point called **PC Active**. If enabled, this data point is 1 as long as there is activity (mouse movement or key press) on the PC. **PC Active** changes from 1 to 0, if there has been no activity on the PC for longer than the time configured in the LWEB-803 project settings (see Figure 57). If occupancy detection is disabled the **PC Active** data point has the constant value 0.

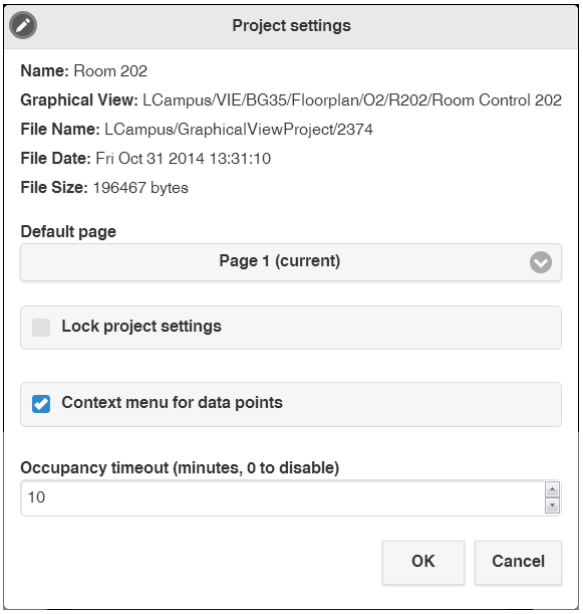


Figure 57: Occupancy Detection

6.5 Zoom Levels

The LWEB-803 Visualization main window can be resized by dragging the corners of the window.

Independent of the view mode the window can be resized using one of the different zoom levels in the **Display Options** menu of the system tray context menu or by using the following keyboard shortcuts:

Shortcut	Description
ALT+ENTER	Maximize LWEB-803
CRTL+1	Zoom level 1x
CRTL+2	Zoom level 1.5x
CRTL+3	Zoom level 2x
CRTL+4	Zoom level 2.5x
CTRL+mouse wheel	Change zoom level

6.6 Standard View, Frameless View, and Design View

There are three display options: Standard View, Frameless View, and Design View. The same project is shown with Standard View in Figure 58, with Frameless View in Figure 59, and with Design View in Figure 60. In Frameless View no title bar is displayed. In Design View no title bar is displayed and the background is transparent.

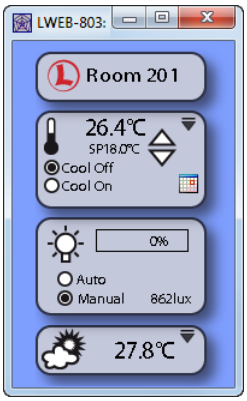


Figure 58: Standard View

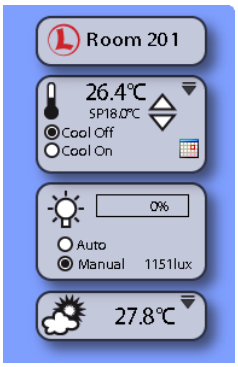


Figure 59: Frameless View

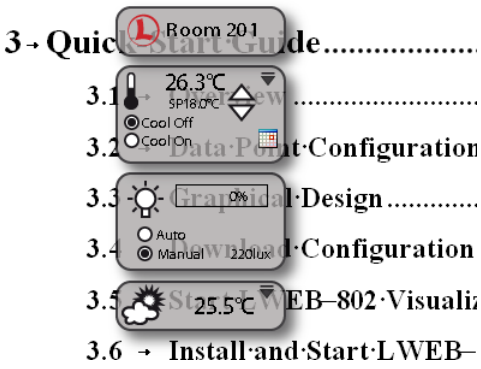


Figure 60: Design View

The display mode can be changed via the context menu of the LWEB-803 system tray icon or by using the following keyboard shortcuts:

Shortcut	Description
CRTL+D	Toggle Design View on/off
CRTL+F	Toggle Frameless View on/off

6.7 Kiosk Mode

In Kiosk Mode the user can only access the LWEB-803 main window but not the Windows desktop or other applications. When LWEB-803 is switched into kiosk mode, the main window comes to the front and covers the whole screen. Kiosk mode can be entered from any zoom level. The part of the screen which is not covered by the project will be filled with the page color.

In Kiosk mode the following shortcuts to access other applications are blocked:

- Alt+Tab, Shift+Alt+Tab
- Alt+Esc, Shift+Alt+Esc
- Alt+F4
- Ctrl+Esc

Use the key combination Ctrl+Enter to leave kiosk mode.

If LWEB-803 should start automatically in Kiosk Mode when the PC boots, select the option **Start Project with Windows** and then activate the Kiosk Mode.

7 LWEB-802/803 Project Solutions

LWEB-802/803 projects are created using the L-VIS/L-WEB Configurator. A detailed description of the L-VIS/L-WEB Configurator can be found in the L-VIS User Manual [1]. However there are a few solutions special to LWEB-802/803 which will be covered in this chapter.

7.1 LWEB-802/803 Registers

It is possible to create LWEB-802/803 registers in the L-VIS/L-WEB Configurator (see Figure 61). Those registers are local to the LWEB-802/803 instance. Each instance of LWEB-802/803 will have its one value. This is different from a data point on a LOYTEC device, where each LWEB-802/803 instance will see the same value. Local registers are sometimes used to store information which is related to the user interface (e.g. the current displayed page ID).

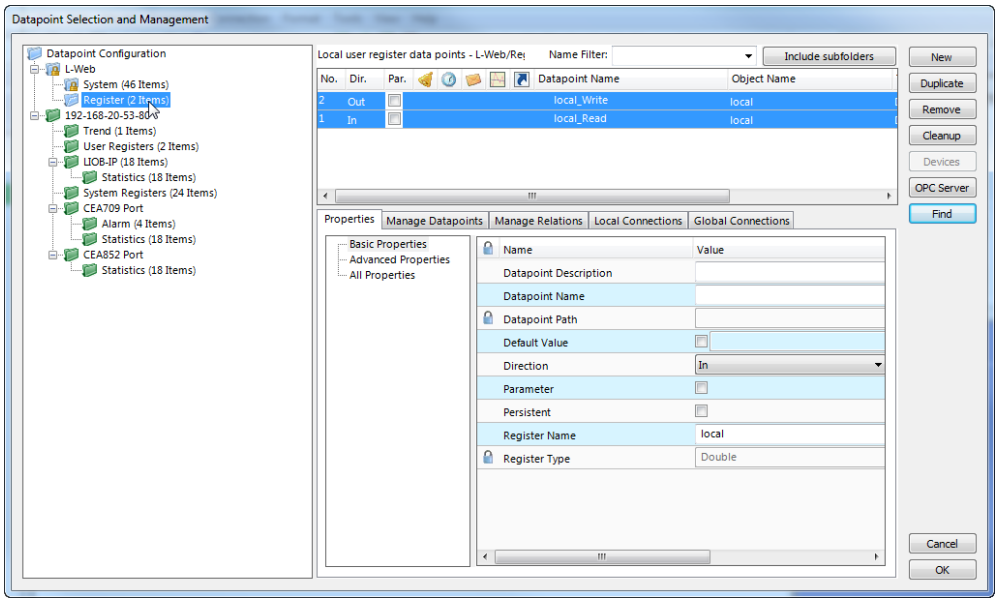


Figure 61: Local LWEB-802/803 register

It is also possible to create math objects in the L-VIS/L-WEB Configurator. Be aware, that these math objects will be executed for each LWEB-802/803 instance. Therefore local math objects should be used only together with local LWEB-802/803 registers. In all other cases, create the math object on the LOYTEC device.

7.2 Occupancy Detection

Occupancy detection is supported only for LWEB-803, not for LWEB-802. LWEB-803 has an internal system data point called **PC Active**. If enabled, this data point is 1 as long as there is activity (mouse movement or key press) on the PC. **PC Active** changes from 1 to 0, if there has been no activity on the PC for longer than the time configured in the LWEB-803 project settings (see Figure 62). If occupancy detection is disabled the **PC Active** data point has the constant value 0.

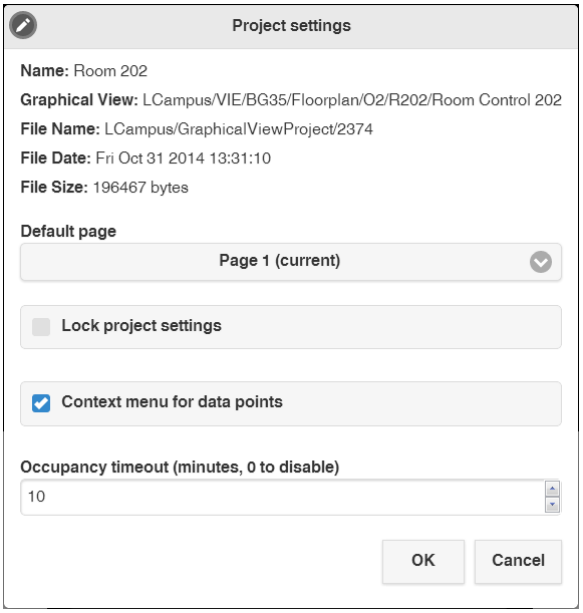


Figure 62: Configuration for LWEB-803 (In)Activity Detection

Figure 63 shows how the **PC Activity** system data point can be used to periodically update a data point on the LOYTEC device as long as there is activity on the PC. The **PC Active** data point and an **Update datapoints** action are attached to a data point connector. The action triggers if **PC Active** changes. As long as the value of **PC Active** is 1, the output data point nvoExtOccupA6 is updated every 300000 milliseconds (5 minutes).

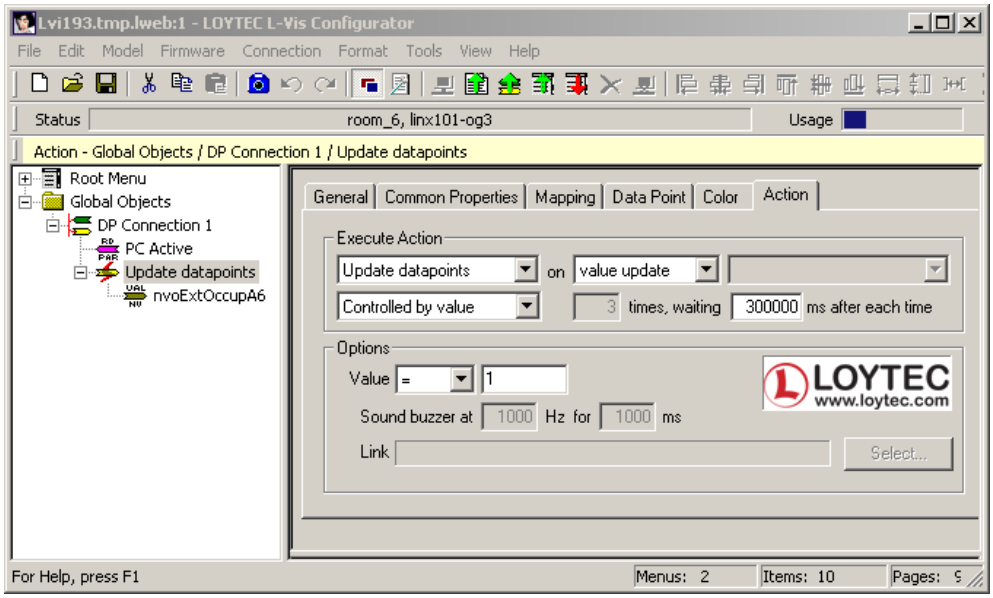


Figure 63: LWEB-803 project with activity detection

7.3 Link to other LWEB-802/803 projects

The **Show page** action can be used to link to a different LWEB-802/803 project (see Figure 64). Press the **Select…** button and enter the URL to an LWEB-802/803 project in the following format:

lweb://<IP Address>:<Port>/<LWEB-802/803 project file name>

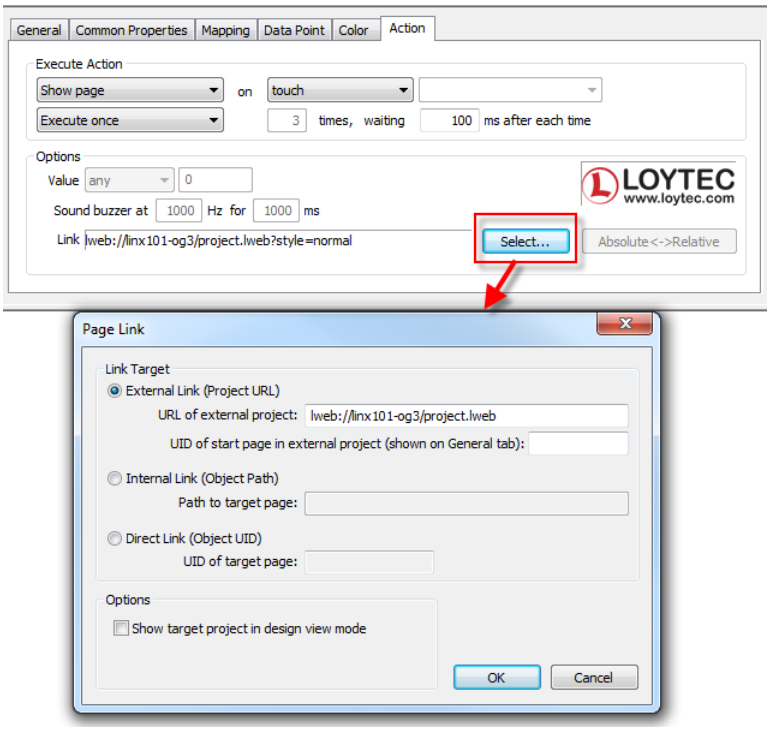


Figure 64: Link to a different LWEB-802/803 project

7.4 Integrating Web-Cams

Web-Cams can be integrated in an LWEB-802/803 project by using a text control and enabling the web browser mode as shown in Figure 65. In the **Text** input filed on the **Common Properties** tab there are the following possibilities:

- Enter the URL of the web-cam you want to display
- Enter any HTML code which can also contain JavaScript
- Enter a complete HTML page starting with the <html> tag

Figure 66 shows an example LWEB-802/803 project with an integrated web-cam.

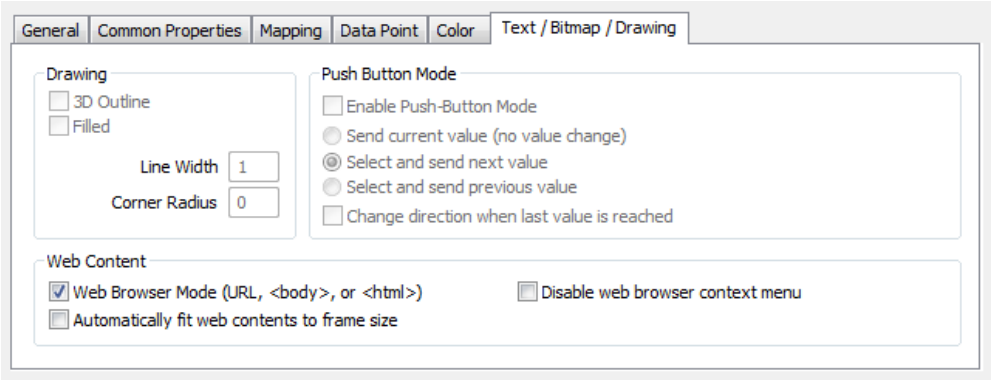


Figure 65: Text control in Web Browser Mode

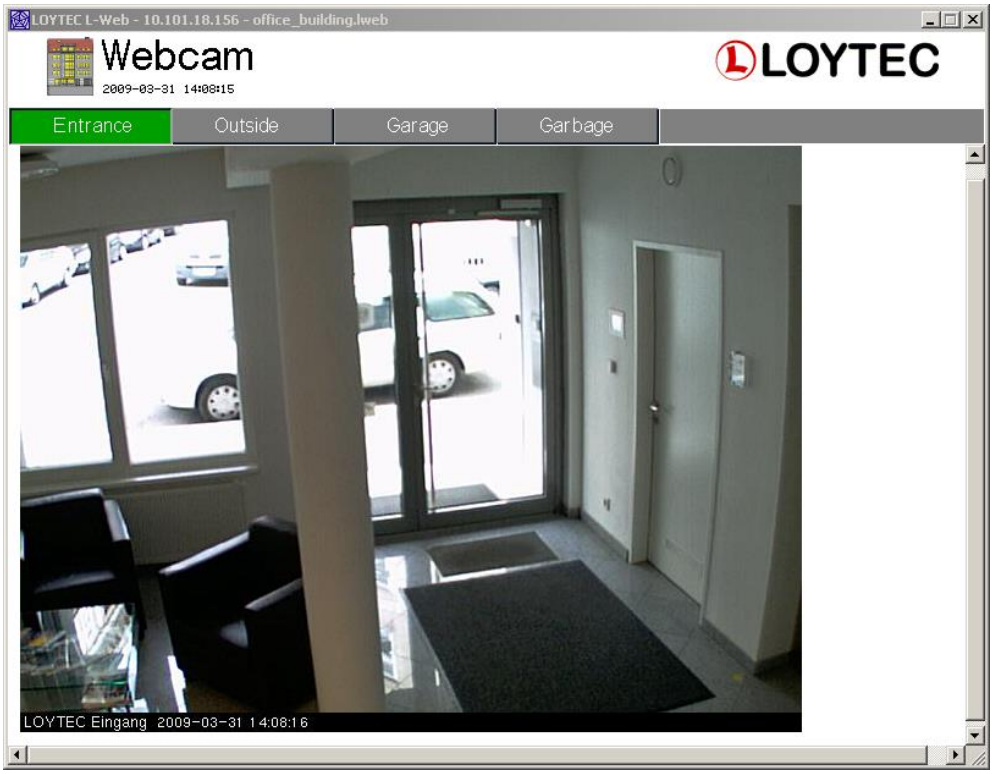


Figure 66: Example of Web-Cam Integration

7.5 Accessing LOYTEC devices behind NAT Routers

If your LOYTEC devices are located behind a NAT router, you need to configure port forwarding on your router. Each router will be slightly different, but the general approach is similar:

1) From your local network, open the web UI of the router by entering the IP address in your web browser's URL box.

2) Look for the port forwarding section and configure the following information:

- Protocol: TCP
- External Port: Port used to access the LOYTEC device from external network

- IP Address: IP address of your LOYTEC device
- Internal Port: HTTP port of your LOYTEC device (default: 80)

3) Check if you can access the web UI of your LOYTEC device from the external network using the IP address of the router and the external port configured in the port forwarding (http://<IP address of router>:<external port>/)

Next you have to add the information of how to access the device from the external network to your LWEB-802/803 project:

1) In the L-VIS Configurator open the data point dialog as shown in Figure 67 and press on the **OPC Server** button.

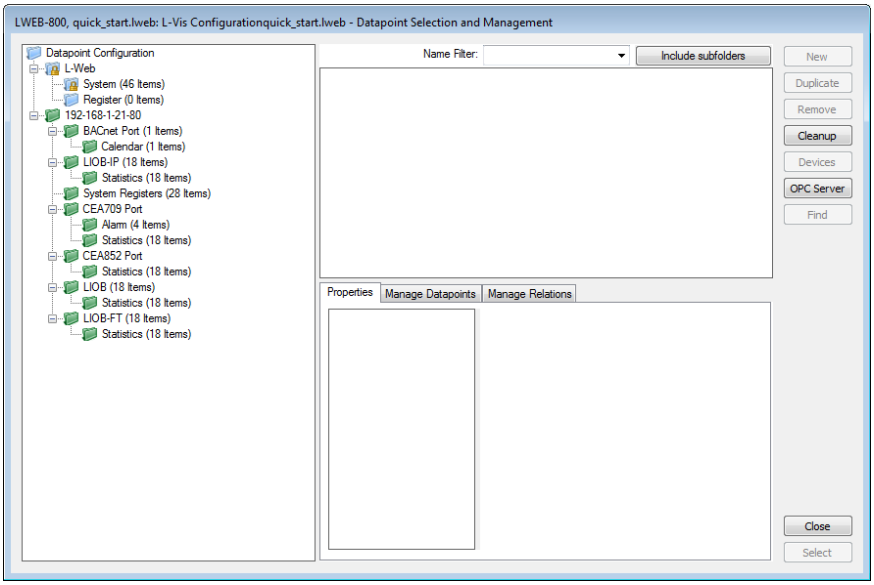


Figure 67: Data Point Dialog

2) In the input field **Public Address**, enter the IP address or hostname of your router and in the **Public Port** enter the external port which you configured in the port forwarding (see Figure 68).

   An alternative way to configure the IP address of the LOYTEC device is shown in Figure 69. The value 'localhost' in the input field **Local Address** is a placeholder which will be replaced by LWEB-802/803 with the IP address of the device from which the project was loaded. This works only if the device from which the project was loaded also contains the data points which are referenced by the project. This is usually the case if you use only a single device in the LWEB-802/803 project.

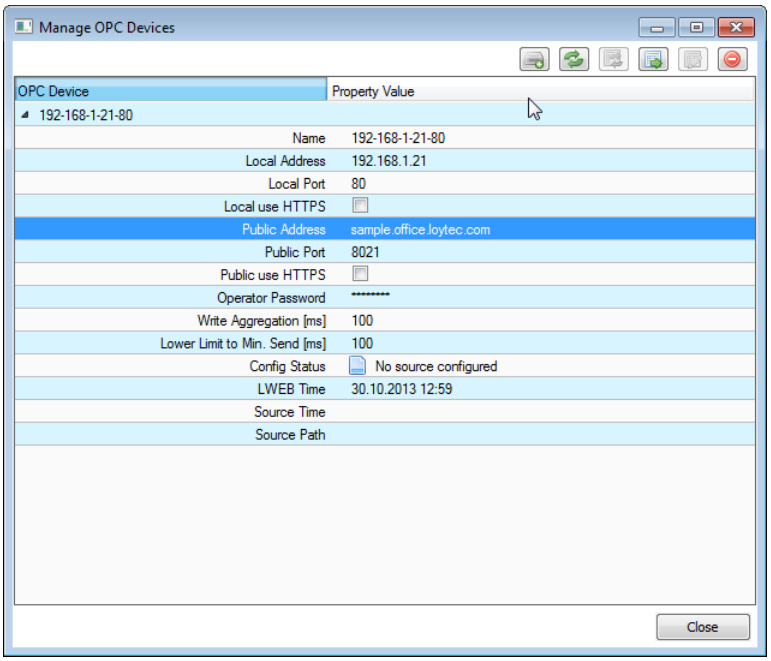


Figure 68: Manage OPC Device, Configure Public Address and Port

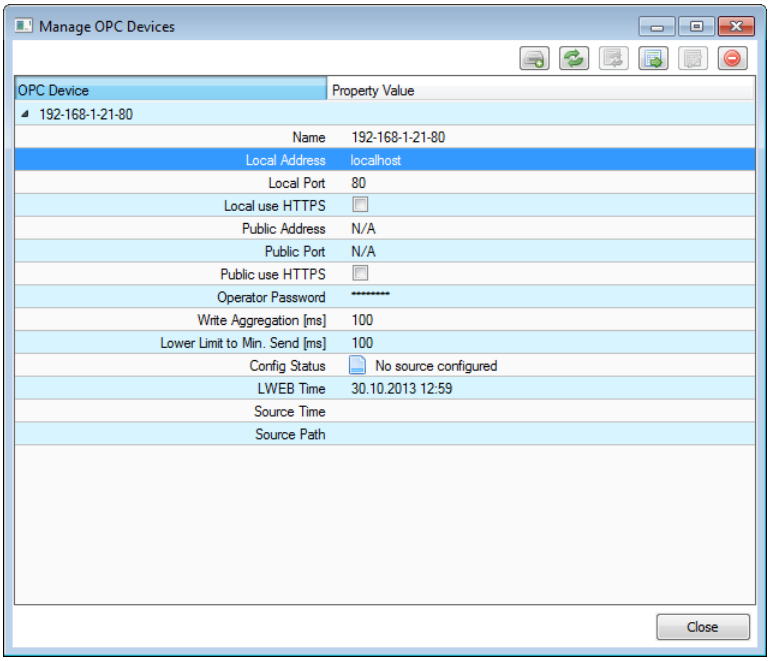


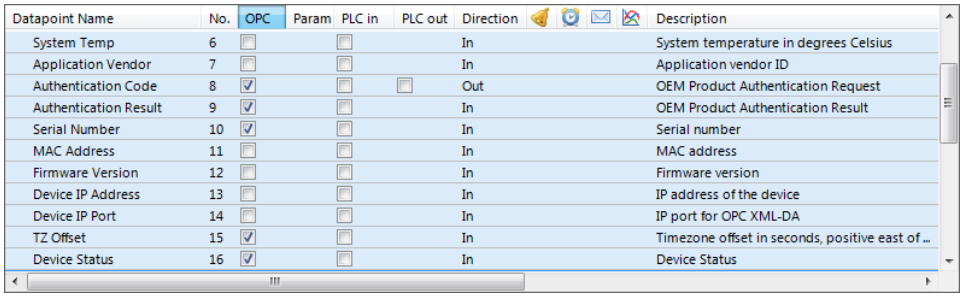
Figure 69: Manage OPC Device, Configure ‘localhost’ as Local Address

3) Download the modified project to the device.

7.6 Reduce Number of OPC Data Points

Per default all data points created in the L-INX Configurator are exposed via OPC. However, each LOYTEC device has a maximum number of supported OPC data points. If you run into this limit, you can reduce the number of OPC data points by deactivation the OPC checkbox for data points which you do not need to visualize. The following system registers are used internally by LWEB-802/803 and the corresponding OPC checkbox must not be removed (see Figure 70).

- Serial Number/Device Serial
- Device Status
- Authentication Code
- Authentication Result
- TZ Offset (required only if the register ‘System Time’ us used to display the current time on the device)



Datapoint Name	No.	OPC	Param	PLC in	PLC out	Direction	Description
System Temp	6	☐		☐		In	System temperature in degrees Celsius
Application Vendor	7	☐		☐		In	Application vendor ID
Authentication Code	8	☑		☐	☐	Out	OEM Product Authentication Request
Authentication Result	9	☑		☐		In	OEM Product Authentication Result
Serial Number	10	☑		☐		In	Serial number
MAC Address	11	☐		☐		In	MAC address
Firmware Version	12	☐		☐		In	Firmware version
Device IP Address	13	☐		☐		In	IP address of the device
Device IP Port	14	☐		☐		In	IP port for OPC XML-DA
TZ Offset	15	☑		☐		In	Timezone offset in seconds, positive east of ...
Device Status	16	☑		☐		In	Device Status

Figure 70: OPC Checkbox

8 LOYTEC Devices

The following table lists all LOYTEC device supported by LWEB-802/803 and their features.

Device	Max OPC Tags	Store LWEB-802/803 projects	Host LWEB-802 application (Web Server)
LINX-10x	2000	Yes	No
LINX-20x	2000	Yes	No
LINX-11x	500	Yes	No
LINX-21x	500	Yes	No
LINX-12x	10000	Yes	Yes
LINX-22x	10000	Yes	Yes
LINX-15x	10000	Yes	Yes
LROC-100	10000	Yes	Yes
LGATE-900	500	Yes	No
LGATE-95x	5000	Yes	Yes
LVIS-3E100	No explicit limit[1]	Yes[2]	No
LVIS-100-RE	No explicit limit[1]	Yes[2]	No
LVIS-ME200	No explicit limit[1]	Yes[2]	No
LVIS-3E11x	No explicit limit[1]	Yes[2]	Yes
LVIS-ME21x	No explicit limit[1]	Yes[2]	Yes
LIOB-48x	300	Yes	No
LIOB-58x	300	Yes	No
LIOB-55x	100	Yes	No

1) The number of OPC tags is defined by the L-VIS configuration

2) The L-VIS project can be automatically converted to an LWEB-802/803 project and stored on the device. No additional LWEB-802/803 projects can be stored on the device.

9 Troubleshooting

9.1 Technical Support

LOYTEC offers free telephone and e-mail support for our LWEB-802 and LWEB-803 products. If none of the above descriptions solves your specific problem please contact us at the following address:

LOYTEC electronics GmbH
Blumengasse 35
A-1170 Vienna
Austria / Europe

e-mail : ***support@loytec.com***
Web : ***http://www.loytec.com***
tel : ***+43/1/4020805-100***
fax : ***+43/1/4020805-99***

or

LOYTEC Americas Inc.
N27 W23957 Paul Road
Suite 103
Pewaukee, WI 53072
USA

email: ***support@loytec-americas.com***
web: ***http://www.loytec-americas.com***
tel: ***+1 (512) 402-5319***
fax: ***+1 (262) 408 5238***

10 References

[1] L-VIS User Manual, LOYTEC electronics GmbH, Document № 88068518, August 2013.

[2] L-INX/L-GATE User Manual, LOYTEC electronics GmbH, Document № 88073017, August 2013.

[3] LWEB-900 User Manual, LOYTEC electronics GmbH, Document № 88081502, Mai 2013.

11 Revision History

Date	Version	Author	Description
2008-08-22	1.0	AD	Initial revision V1.0
2008-11-13	1.1	AD	Moved description of LWEB-801 into a separate document Updated manual for LWEB-800 release 1.1.0
2009-03-31	1.2	AD	Updated manual for LWEB-800 release 1.2.0 Complete rework
2009-10-09	1.3	AD	LWEB-801 Data Logger was renamed into LWEB-801 Server Added section 5.2 about the window specific settings
2011-11-15	1.4	RB	Windows mobile not supported anymore Some minor adjustments according to comments
2012-06-27	1.8	AD	Updates for LWEB-800 version 1.8.0 and LWEB-802 1.0.0
2012-07-18	1.8.1	AD	Fixed error in device capability list in Chapter 8
2012-10-29	1.9	AD	Update for LWEB-802 version 1.1.0: LWEB-802 now supports trend log controls.
2013-02-22	1.10	AD	Update for LWEB-802 version 1.2.0: LWEB-802 now supports scheduler controls.
2013-05-31	1.11	AD	Update for LWEB-802 version 1.3.0: LWEB-802 now supports alarm controls.
2013-10-28	1.12	AD	Update for LWEB-800 version 1.9.0 Update for LWEB-802 version 1.4.0
2014-02-26	1.13	AD	Update for LWEB-802 version 1.5.0
2014-06-24	2.0	AD	Initial version for LWEB-803 2.0
2014-11-21	2.1	AD	Update for LWEB-802/803 version 2.1.0