

# FAG



## FAG SmartVisual

User manual

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## Imprint

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The software uses the following third-party provider libraries: Apache CXF, JAXB, Jettison, Jetty 7, Project Lombok, SLF4J, StAX 1.0 API, android-multitouch-controller, NineOldAndroids, simple-xml, guava, android-support, ksoap2-base, ksoap2-j2se under their respective licences.  
Full licence conditions for the respective libraries can be found in the software's program directory.

Translation of the original user guide.  
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# 1 General

The FAG SmartVisual software is a plant visualisation system that enables you to view the alarm status of your FAG SmartCheck devices. The SmartVisual Editor includes a user interface that can be used to manage and view a host of visualisation tables, allowing you to visualise your entire plant and link to each area directly from the system to gain an overview of all your FAG SmartCheck devices.

With the help of the optional SmartVisual app, you can use your mobile device anywhere to observe your plant and even directly open your SmartCheck devices.

## About the FAG SmartCheck system

FAG SmartCheck is a vibration monitoring system for permanent frequency-selective monitoring. Measurement values can be captured, recorded and analysed using two integrated signals and up to three connected signals. After the analysis, the system can switch outputs and display the status using LEDs depending on user-defined alarm limits.

Inputs are available, which record additional signals, to allow the device to be integrated into a superordinate system. These signals can be used as command variables for a dependent signal analysis, e.g. to initiate time or event-controlled measurement jobs.

The FAG SmartCheck device can be used to cover a wide range of applications; the SmartCheck device can be configured to meet your own requirements using the integrated web application and FAG SmartWeb software. Multiple SmartCheck devices can be combined in a network. Regardless of the number of devices, they can be managed centrally on a PC using the FAG SmartUtility Light software. With the full version of FAG SmartUtility, you can also access the sensors directly in the FAG SmartWeb software, analyse measurement data in the SmartUtility Viewer and download configurations and install them on other devices.

In FAG SmartCheck, the Schaeffler Group is offering you condition monitoring that is optimised to suit your requirements.



## 1.1 About this guide

This guide describes how to use the FAG SmartVisual software and the optional FAG SmartVisual app. Please read this guide carefully before using the software or app, and store it in a safe place.

Make sure that

- This guide is available to all users
- If the product is passed on to other users, that this guide is also passed on with it
- Additions and amendments provided by the manufacturer  are always attached to this guide.

### Further information

The FAG SmartVisual software and FAG SmartVisual app are optional components of the FAG SmartCheck vibration monitoring system. This system also includes the FAG SmartCheck device and the FAG SmartUtility Light software, each of which is described in its respective manual.

Optionally, instead of the FAG SmartUtility Light software, you can purchase the FAG SmartUtility software with enhanced functionality. This is also described in a separate manual.

### Definitions

- Product: the FAG SmartVisual software described in this manual.
- User: person or organisation capable of putting the product into operation and using it.

### Symbols used



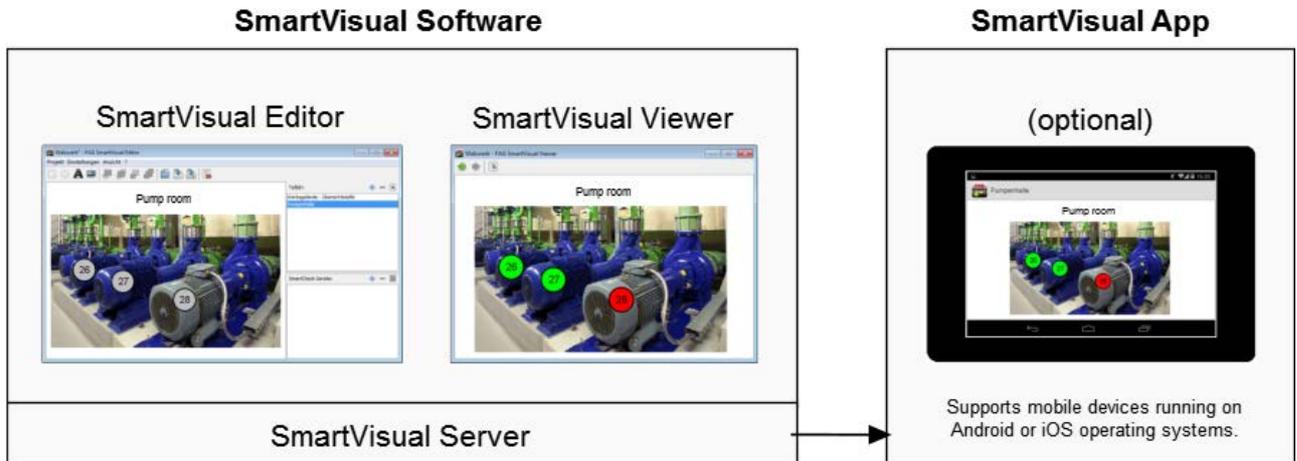
This symbol indicates

- Helpful additional information and
- Settings or practical tips that will help you to perform activities more efficiently.

Cross-reference symbol : This symbol refers to a page in the manual that provides further information. If you are reading the manual in PDF format on screen, clicking the word to the left of the cross-reference symbol will take you straight to the section in question.

## 2 FAG SmartVisual

The SmartVisual software is made up of the following components:



- SmartVisual Editor: Here, individual tables can be edited to create a complete visualisation of the plant - from the site plan, to the machine hall, to the individual machines. It can also be used to position elements containing links to the SmartCheck devices.
- SmartVisual Viewer: This component allows the user to scroll through the individual tables. The alarm status of the elements linked to SmartCheck devices is displayed here. Double-clicking on a SmartCheck device will open the device in the browser.
- SmartVisual Server: This service runs in the background and regulates communication between the SmartVisual Editor and the optional SmartVisual app for mobile devices.
- SmartVisual App (optional): The SmartVisual application offers the same range of functions as the SmartVisual Viewer. The SmartVisual app for mobile devices is available from the App Store.

## 3 About the SmartVisual software

The SmartVisual software is provided to you as a setup version that you need to install. You can find this version in the "SmartVisual" program directory on the supplied CD-ROM. The setup version automatically checks the requirements for using the SmartVisual software and installs the relevant elements as required.

### 3.1 User rights and write access

To install and operate the SmartVisual software, you require special access rights. Please contact your system administrator if you experience problems with the security requirements of your system.

#### User rights

To install the SmartVisual software, you require administrator rights on your system.



Tip: Install the software with administrator rights and then switch back to a normal user.

#### Write access

The software saves settings data and log data during operation. For this reason, you require write access for the following directories for the setup version of the SmartVisual software:

##### Program files

C:\Programme\FAG\SmartVisual

##### Configuration and settings files

C:\Benutzer\[Benutzername]\AppData\Roaming\FAG\SmartVisual

### 3.2 System requirements

Your system needs to meet the following requirements for you to get the most from your SmartVisual software:

#### General system requirements

Windows 7 (32/64 bit)

The system requirements recommended by Microsoft must be met as a minimum:

- Dual-core processor
- 2 GB RAM (recommended: 4 GB RAM)
- 16 GB of hard disc space available
- DirectX 9 graphics device with WDDM 1.0 driver or higher

In addition:

- Screen resolution: 1024x768 (pixels) at 96 dpi and normal font size (recommended: 1280x800 or higher)
- Disk space for software: at least 20 MB free disk space
- Mouse: three-button mouse recommended

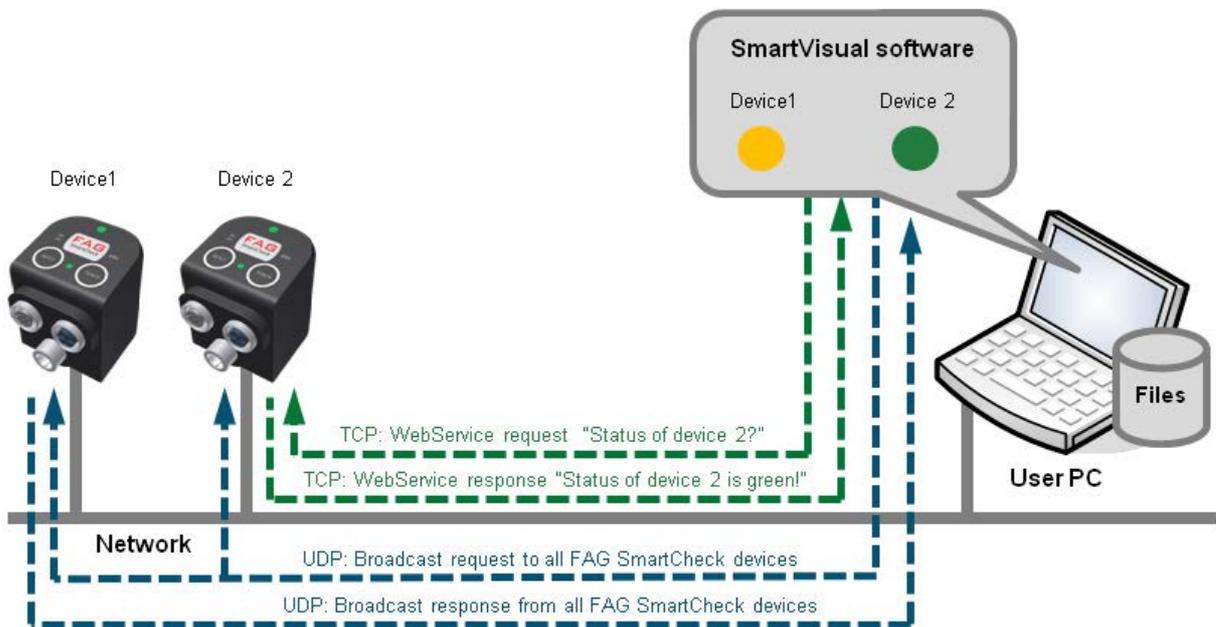
#### Other requirements

- Microsoft .NET Framework 4.5
- Standard browser: Mozilla Firefox ESR 24.0 (recommended), Internet Explorer 8
- Java Runtime Engine 1.6
- Windows Installer 4.5

#### Requirements for connection to the computer

- The communication protocol TCP must be enabled on port 80 and the UDP communication protocol enabled on ports 19002 to 19003 used in existing firewalls in your network. The UDP port numbers can be set [29] in the settings for the SmartVisual software.

- The proxy setting in Internet Explorer must be set to "Automatic search".
  - If the SmartCheck device has not been assigned an address via DHCP, it will have the IP address 192.168.1.100 by default. In this case, the IP address of your computer must be within the 192.168.1.x range.
- Please contact your system administrator if you experience problems with the network settings.



UDP port: 19002 and 19003  
TCP port: 80

*Standard way in which the SmartVisual software communicates with the FAG SmartCheck devices*

### 3.3 Installing the software

Open the SmartVisual program directory on the supplied CD-ROM. Double-click on the file Setup.exe. This starts a wizard, which will guide you through the individual installation steps:



This includes - depending on your system configuration - the following steps:

- Select target directory: You can either accept the suggested directory or enter a different directory. The FAG SmartVisual software is saved in the following directory by default:  
C:\Programs\FAGSmartVisual.

- Select components: Here you can specify whether the handbooks are to be installed and shortcuts pinned to the Start menu or desktop.
- Select folder in start menu: This option allows you to adjust the SmartVisual entry in the Start menu to your preferences.

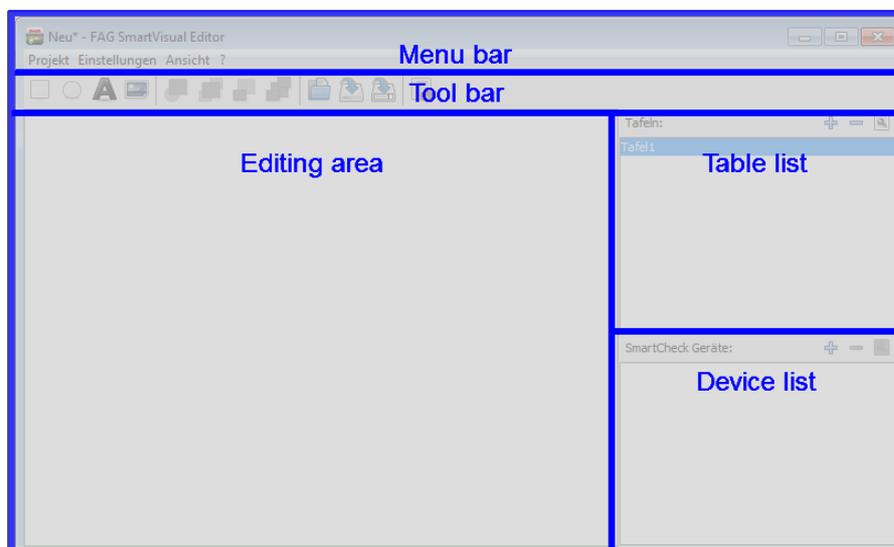
Depending on the option you select, shortcuts that you can use to start the SmartVisual software will be added to the Start menu and desktop during the installation process. Once the installation process is complete, the software can be started from the wizard by activating the Run SmartVisual checkbox.

### 3.4 Starting the software

You can start the SmartVisual software via links in the Start menu and on the desktop. When the software is started for the first time, the SmartVisual Editor opens. Using the Editor, the individual tables can be edited and SmartCheck devices added to them. The tables can then be viewed in the SmartVisual Viewer. When FAG SmartVisual is started, a SmartVisual server instance is automatically started too. This will run in the background for the entire time the software is in use. The SmartVisual server is the interface connecting the SmartVisual software and the optional SmartVisual app.

### 3.5 Editor user interface at a glance

The user interface for the SmartVisual Editor can be broken down as follows:



The user interface offers you these options:

#### Menu bar

The following options can be found in the menus:

#### Project

- New: This command is used to create a new project. If you have not yet saved any changes made to the project currently in use, you will be prompted to do so.
- Open: This command is used to open an existing project.
- Recent projects: Projects recently opened in SmartVisual are displayed here. By clicking on the links in this list, you can gain rapid access to the projects in question.
- Save: This command is used to save a project under a file name and storage location defined by you.
- Save as: This command is used to save a project under a file name and storage location defined by you. If you are saving a project for the first time, the Save as dialog box is displayed automatically if you click on Save.



To make use of the optional SmartVisual app, the project must be saved in the following folder: C:\Users\[User name]\AppData \Roaming\FAG\SmartVisual\configs. If this is not the case, the SmartVisual server will be unable to find the project files.

## Settings

- Close: This command is used to close SmartVisual. The SmartVisual server remains active and is displayed as a symbol on the task bar. To also exit the SmartVisual server, right-click on the symbol and select "Exit SmartVisual server".
- Load recently used project automatically on startup: If this option is activated, the most recently used project is automatically opened on startup.
- Start SmartVisual Viewer with current table: If this option is activated, the SmartVisual Viewer opens displaying the table that is currently selected.
- Show recently used table automatically: If this option is activated, the SmartVisual Viewer automatically shows the most recently used table on startup.
- Language:  This option is used to define the language in which the SmartVisual software interface is to be displayed.
  - Select language: The following languages can be selected by default: German and English.
  - Export/import language file: Here you have the option of exporting the language file in CSV format and adding another language. Once you have translated the text, you can import the language file again. The new language is displayed the next time the program is started.
- Status update interval:  Here you can define the intervals at which the alarm status of the SmartCheck devices in the SmartVisual Viewer is queried.
- Set UDP ports:  Here you can set the UDP ports for the device search and device configuration.

## View

- Start SmartVisual Viewer: This command starts the SmartVisual Viewer that is used for executing projects created in the SmartVisual Editor.

## ?

Here you can find detailed information about the version of the SmartVisual software, including the option to register for the 60-day test version.

## Tool bar

In the tool bar, you will find the drawing functions for the plant visualisation, as well as shortcuts to the most frequently used menu items:



Add rectangle: Creates a rectangle or square.



Add ellipse: Creates an ellipse or a circle.



Add text: This option allows you to add text.



Add image: This option allows you to add a site plan or photo as a background image and mark the position of the SmartCheck devices.



Bring element one layer forward: This option allows you to move an image you have added or individual objects one layer forward.



Bring element to front: This option allows you to bring an image you have added or individual objects to the front.



Bring element one layer backward: This option allows you to move an image you have added or individual objects one layer back.



Bring element to background: This option allows you to move an image you have added or individual objects to the background.



Open: Click on this button to open a saved project.



Save: Click on this button to save the project currently in use.



Save as: Click on this button to save the project currently in use in a different directory or under a different name.



Go to SmartVisual Viewer: Click on this button to display the project currently in use in the SmartVisual Viewer.

### Table list

Here you can create several tables containing hall plans or images for each project.

### Device list

Here you can view the SmartCheck devices you have added to a project.

### Editing area

Here you can edit the individual tables, e.g. add a hall plan or photo as a background image and mark the positions of the SmartCheck devices.

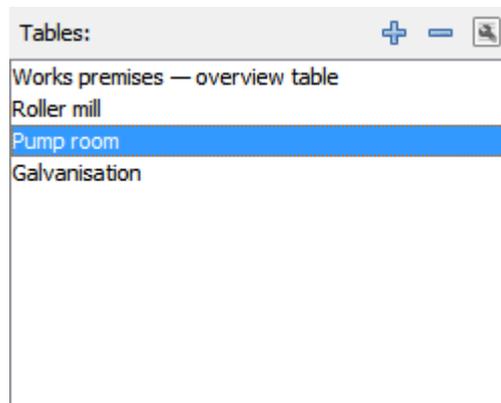


You can use the separator between the table and device areas to adapt the interface of the SmartVisual software to suit your requirements:

- Holding down the left mouse button, drag the separator up or down to alter the size of the relevant area.

## 3.5.1 Table list

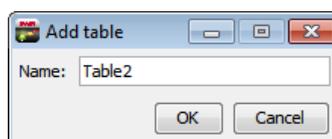
Using SmartVisual, you can visualise multiple plant tables and establish links between them. For instance, using this software, a table with a site plan can be created, which can be used to call up the individual halls containing the plants and SmartCheck devices.



Example

### Adding a table

- Click on to add more tables to the project.



- If necessary, change the name of the table.
- Click on OK.

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### Editing a table

- Double-click on an entry in the Tables area.

Or:

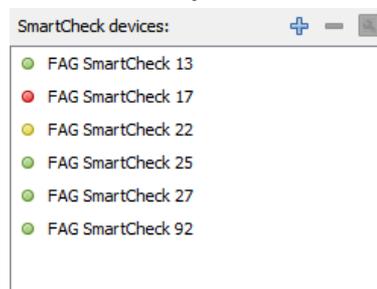
- Select a table from the Tables area.
- Click Edit  in the tool bar.
- Give the table a clear name (e.g. "Pump room").
- Click on OK.

### Removing a table

If a table is no longer required, it can be removed from the table list by highlighting the table and clicking Delete . The table is deleted.

## 3.5.2 Device list

In the device list, you can add the SmartCheck devices that you wish to monitor using the SmartVisual software.



Example

### General

The procedure differs depending on whether all devices are in the same network in the same IP range or whether there is a router in between.

#### SmartCheck devices in the same network

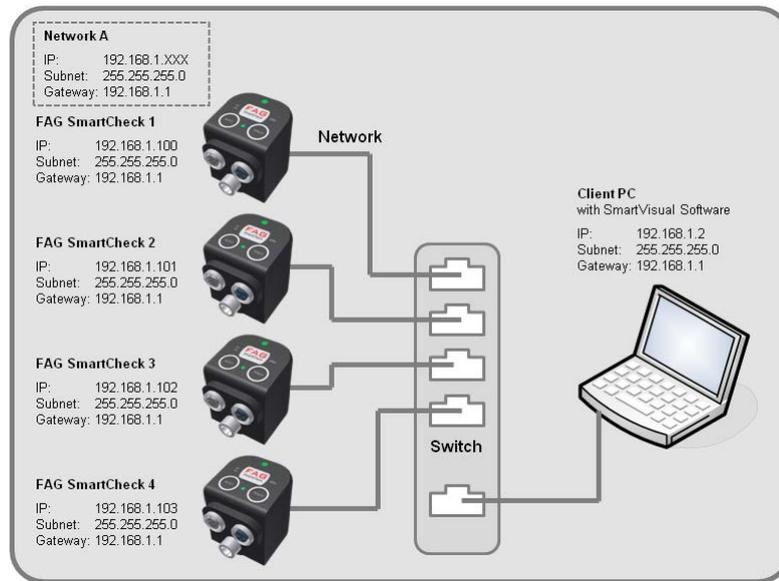
If the computer is located in the same network as the SmartCheck devices, these devices will automatically be displayed in the device list.



Different ports are used to search for the SmartCheck devices, as well as the configuration of the devices. If you are using the SmartUtility (Light) software in parallel, different UDP ports must also be used for this software to avoid port conflict. The ports are configured as follows by default:

	SmartVisual	SmartUtility (Light)
UDP port for device search:	19002	19000
UDP port for device configuration:	19003	19001

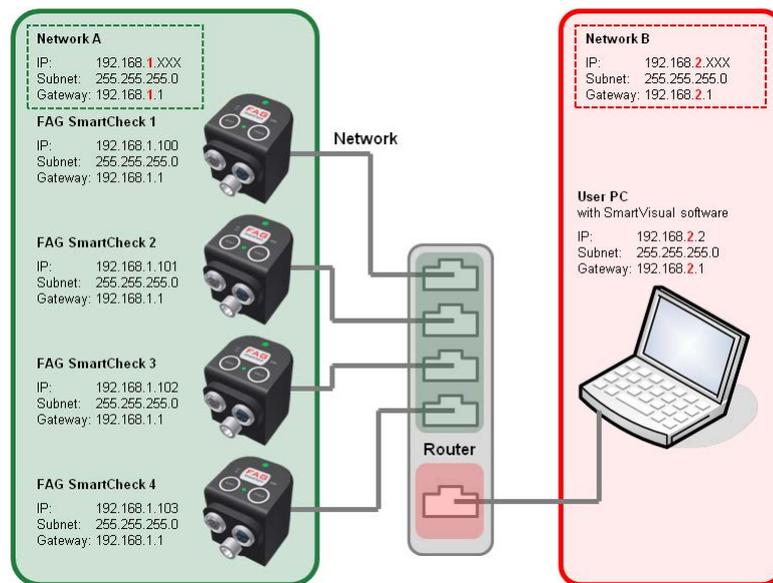
These automatic settings are generally correct. If necessary, you can change the ports in the Settings  option in the software. If there are any problems, please contact your system administrator.



Example

### SmartCheck devices outside the network

If the computer is located in a different network to the SmartCheck devices, the devices must be added manually. This is because the router filters out the UDP broadcast.



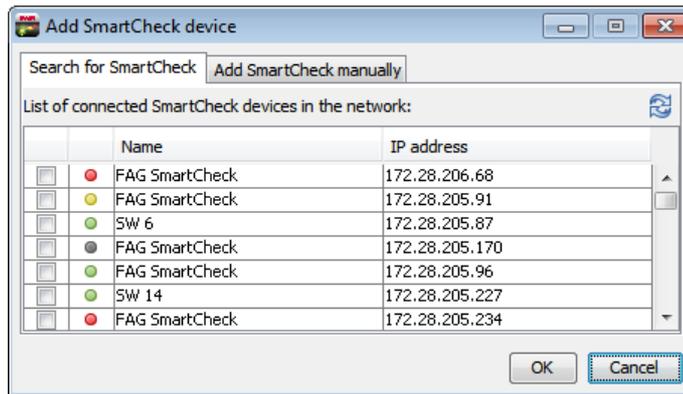
Example

The process for adding devices manually is covered in the section entitled [Adding SmartVisual devices manually](#)<sup>14</sup>.

### Adding devices

- Click on  to add more devices to the project.

All the SmartCheck devices found in the network are displayed in the list:



The following information and functions are to be found here:

- The columns in the list provide information on the alarm status, name and IP address of the individual SmartCheck devices.
- The alarm symbols show you at a glance:
  - Green: There is no alarm
  - Yellow: One or several characteristic values have triggered a pre-alarm
  - Red: One or several characteristic values have triggered a main alarm
  - White: The alarm status is still unknown, e.g. because the SmartCheck device has not yet carried out any measurements.
- The alarm symbols are updated on a regular basis.
- You can adjust the column width.



If the list does not contain any entries or a device is missing, you can update the list. To do so, click on Refresh  or add the device manually (see below). If there are still no devices displayed, make sure:

- that the device is in measuring mode and connected to the network;
- that you are connected to the network;
- that the UDP port  settings in the SmartVisual software are correct.

### Select devices

You have the option of adding one or more devices that you would like to position in the tables to the device list. To do so, activate the checkbox in the list  in front of the appropriate device name.

### Updating the device list

You can update the list of SmartCheck devices by clicking Delete .

### Adding devices manually

If you cannot find a SmartCheck device in the list of available devices, or the device is not located in the same network, you can also add it manually. To do so, click on the Add SmartCheck manually tab:

Here you have the following options:

- Specify a name to be used to indicate the SmartCheck device in the device list.
- Enter the address (IP address) of the SmartCheck device.
- Set the protocol type for the communication. This is usually UDP.
- If the device is password-protected, specify the user name and password.
- Click on OK.



Further information on the password protection of SmartCheck devices can be found in the User management chapter in the FAG SmartWeb user documentation.

#### Editing a device

- Double-click on an entry in the SmartCheck devices area.
- Or:
- Select a device from the SmartCheck devices area.
  - Click Edit  in the tool bar.
  - Edit the name, IP address, protocol type and password information.
  - Click on OK.

#### Remove device

If a device is no longer required, it can be removed from the list of devices by highlighting the device and clicking Delete . The device is removed from the device list in the SmartVisual software.

### 3.5.3 Editing area

In the editing area of the SmartVisual Editor, the individual tables can be edited and SmartCheck devices can be positioned. For example, a site plan could be added and used to link the individual halls with the plants and SmartCheck devices.

The following visualisation elements are available in the editing area:

- Adding rectangular or elliptical elements [16](#)
- Adding and editing text [16](#)
- Adding images [17](#)
- Deleting elements [17](#)
- Linking elements [18](#)

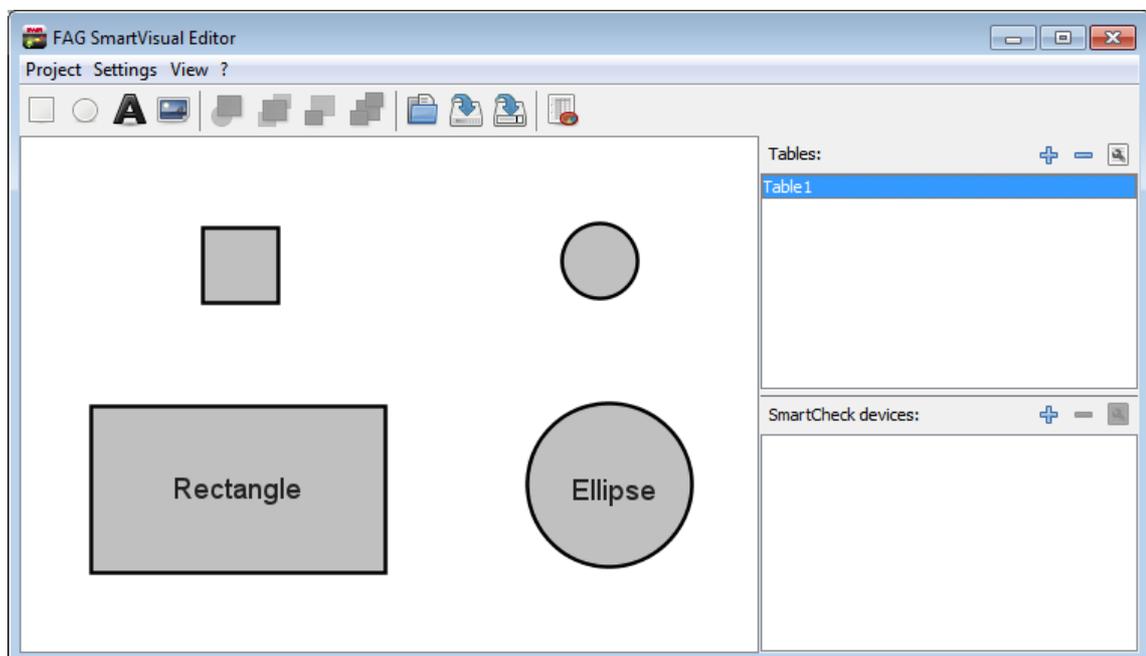


- The size of images and elements can be scaled horizontally, vertically or proportionally. For example, to scale an image proportionally, click on a corner of the image using the left mouse button, hold the Shift key down and drag the image to the required size. Using the Ctrl key, an object can be scaled over a fixed midpoint.
- When new images or elements are added, these elements are always positioned in the foreground. The "Bring element one layer backward" tool in the tool bar  can be used to move certain elements one layer back, for example, if required.
- If you wish to move an element, simply highlight it and, keeping the left mouse button held down, drag it to the required position. Several elements can be moved at once by using the mouse to highlight all of the elements you wish to move.

### Adding rectangular or elliptical elements

Rectangular or elliptical elements can be used to visualise hall plans or the position of the SmartCheck devices.

- Click on Add rectangle  or Add ellipse  in the tool bar.
- The element is automatically positioned in the foreground.
- Move the element to the required position.



### Adding and editing text

Text can be added to clearly identify the individual elements of the table.

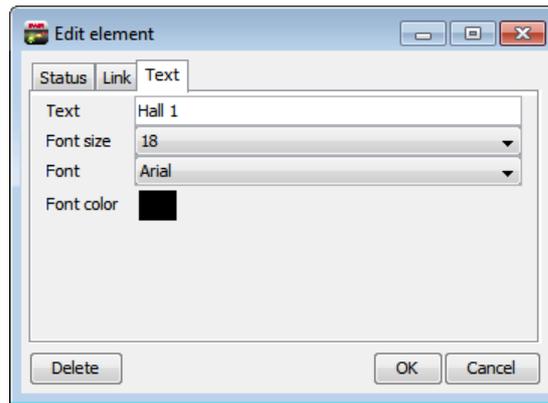
#### Adding text

- Click on Add text  in the tool bar.

The text element "Text" is automatically positioned in the foreground. By highlighting the text element and clicking the "Delete" key, you can delete the example text and add new text.

#### Editing text

- Double-click on the text element.
- In the Edit element dialog box, click on the Text tab.



- Enter the required text (e.g. "Hall 1").  
You also have the option of adjusting the font, font size and/or font colour.
- Click on OK.
- Move the text element to the required position.

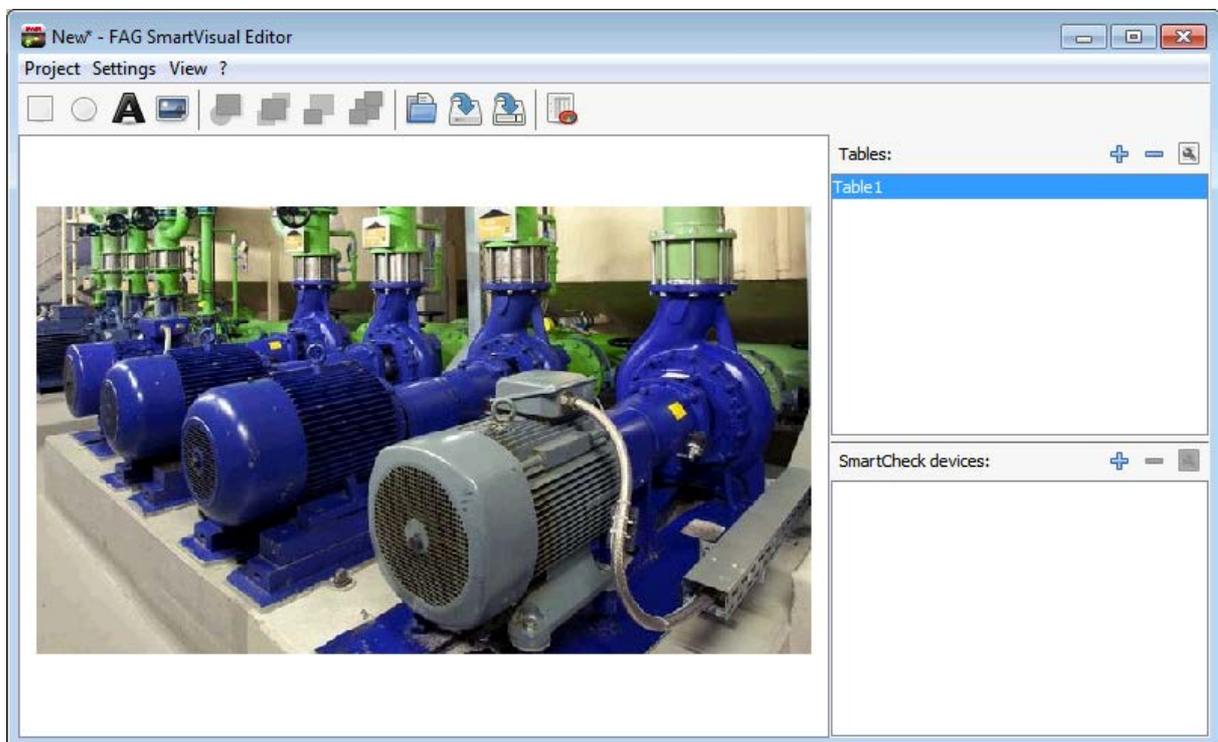
### Adding images

Images or graphic representations of your plant can be added, to visualise the position of the individual SmartCheck devices, for example.

- Click on Add image  in the tool bar.
- Select a photo or graphic representing your plant. The image must be in one of the following formats: JPG, BMP or PNG.
- Click on Open.

The image is automatically positioned in the foreground.

- Move the image to the required position.



### Deleting elements

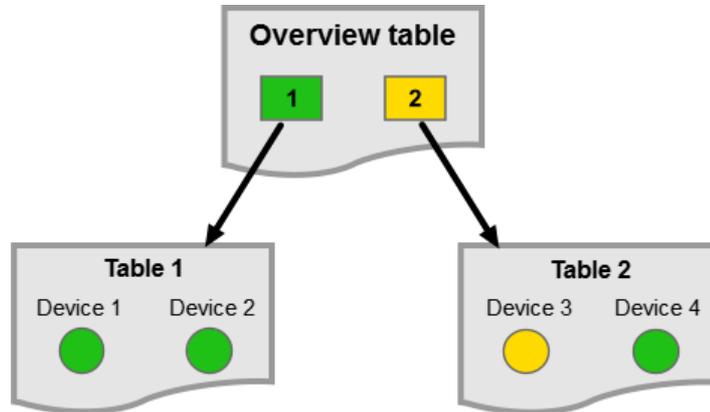
- Highlight the element that you wish to delete from the table.
- Press the Delete key.

Or:

- Double-click on the element that you wish to delete.
- In the Edit element dialog box, click Delete.

### Linking elements

Each element can be linked to another table and/or a SmartCheck device. In this way, a site plan containing several halls can easily be visualised, as can the overall alarm status of the SmartCheck devices in the halls.

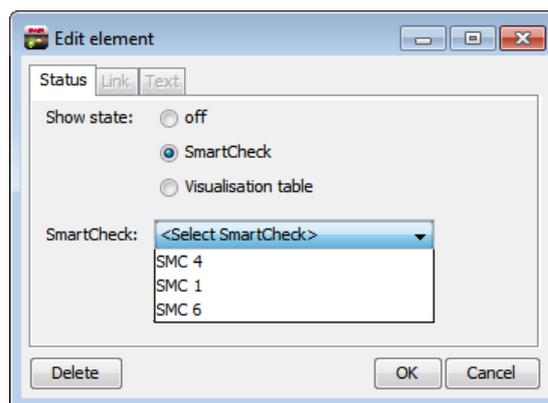


- In order to better differentiate between the individual elements, it is recommended to use elliptical elements for linking to SmartCheck devices and rectangular for linking to tables.
- If an element links to the alarm status of a table containing several SmartCheck devices, the overall alarm status will always be displayed; in other words the consolidated alarm status of all devices.
- Text elements and images cannot display the alarm status of a SmartCheck device. Please only use rectangular or elliptical elements to display the alarm status.

### Linking an element to a SmartCheck device

Link an element to a device in order to display the alarm status of the SmartCheck device.

- Double-click on the element that you wish to link.



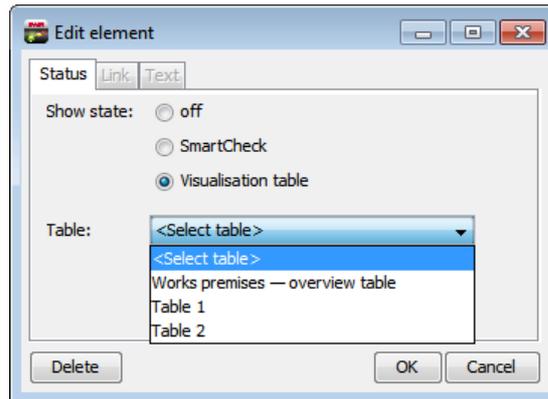
- In the Edit element dialog box, click on Status.
- Select SmartCheck and
- select a device from the list.
- Click on OK.

The element is now linked with the SmartCheck device. The alarm status of the device will only be displayed when viewing the table in the SmartVisual Viewer or in the optional SmartVisual app.

### Linking an element with another table

The overall alarm status of another table can be displayed by linking an element to that table.

- Double-click on the element that you wish to link.



- In the Edit element dialog box, click on Status.
- Select Visualisation table and
- select a table from the list.
- Click on OK.

The element is now linked with the table. The alarm status of all the SmartCheck devices in the linked table will only be displayed when viewing the table in the SmartVisual Viewer or in the optional SmartVisual app.



If you just wish to link to another table without displaying the alarm status, click on Link in the Edit element dialog box and select a table. In this way, an element containing a link to an overview table can be added, or a Home button can be created.

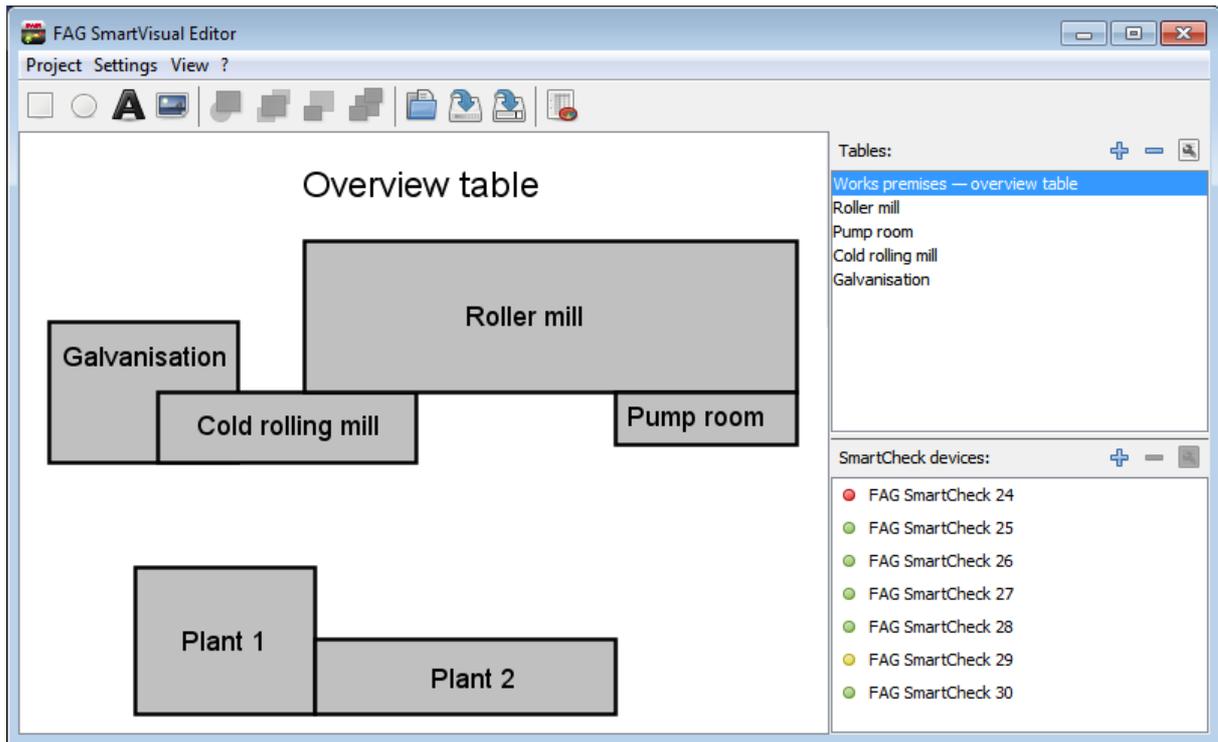
### 3.6 Editing a project in the editor

When starting the SmartVisual software for the first time, an empty project is displayed. You can then start editing the first table by adding a general plan, a ground plan or a photo and marking the positions of the individual SmartCheck devices.

The following example describes how to set up a plant visualisation with a hall plan, and from there establish links with the SmartCheck devices in the individual halls:

1. Configuring an overview table [20](#)
2. Adding and configuring further tables [22](#)
3. Positioning SmartCheck devices [23](#)
4. Linking SmartCheck devices [24](#)
5. Linking tables [24](#)
6. Saving a project [25](#)

The result will look something like this:



### 1. Configuring an overview table

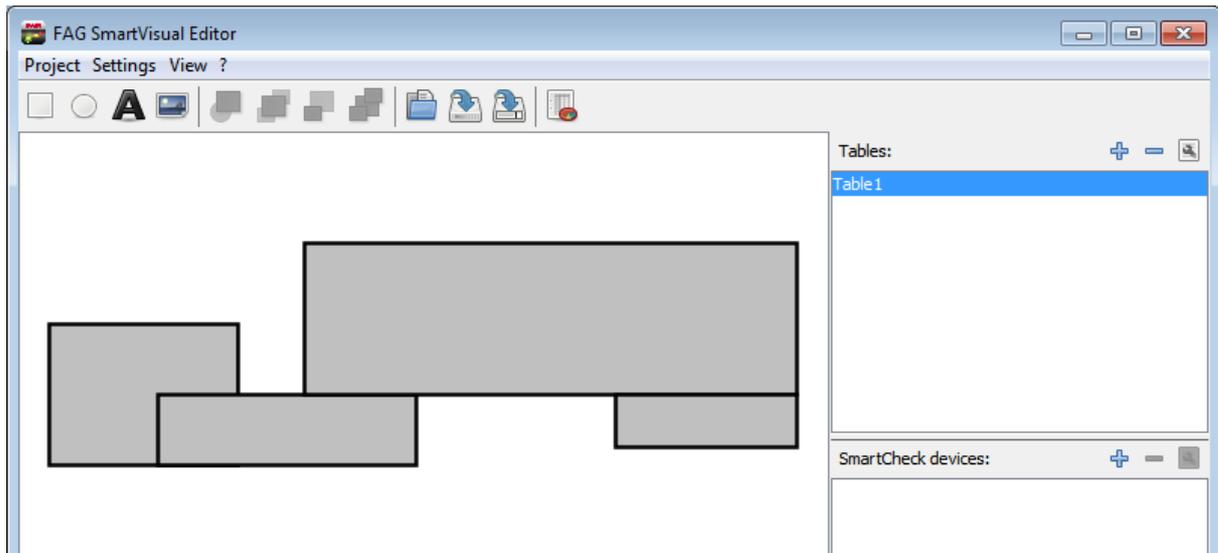
If you use multiple SmartCheck devices in different halls, you must first create a plan of your works premises in the form of an overview table. To do so, create a rough drawing of the halls using rectangular or elliptical elements and label the halls accordingly.



- A photo of your works premises can be used as a template. To do so, click "Add image" in the tool bar  and use the tools  to position it in the background.
- The size of images and elements can be scaled horizontally, vertically or proportionally. For example, to scale an image proportionally, click on a corner of the image using the left mouse button, hold the Shift key down and drag the image to the required size. Using the Ctrl key, an object can be scaled over a fixed midpoint.
- When new images or elements are added, these elements are always positioned in the foreground. The "Bring element one layer backward" tool in the tool bar can be used to move certain elements one layer back, for example.

### Adding rectangular or elliptical elements

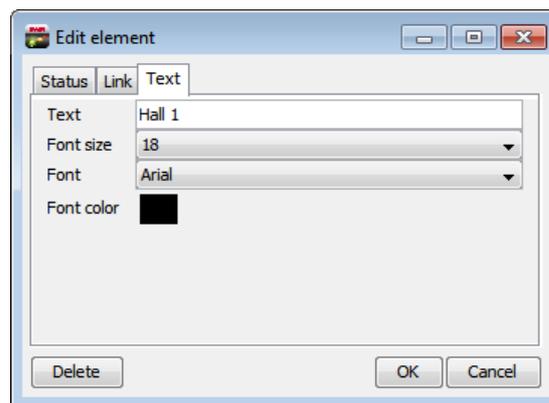
- Click on Add rectangle  or Add ellipse  in the tool bar.
  - Adjust the size and position of the element.
- The element is automatically positioned in the foreground.
- Move the element to the required position.



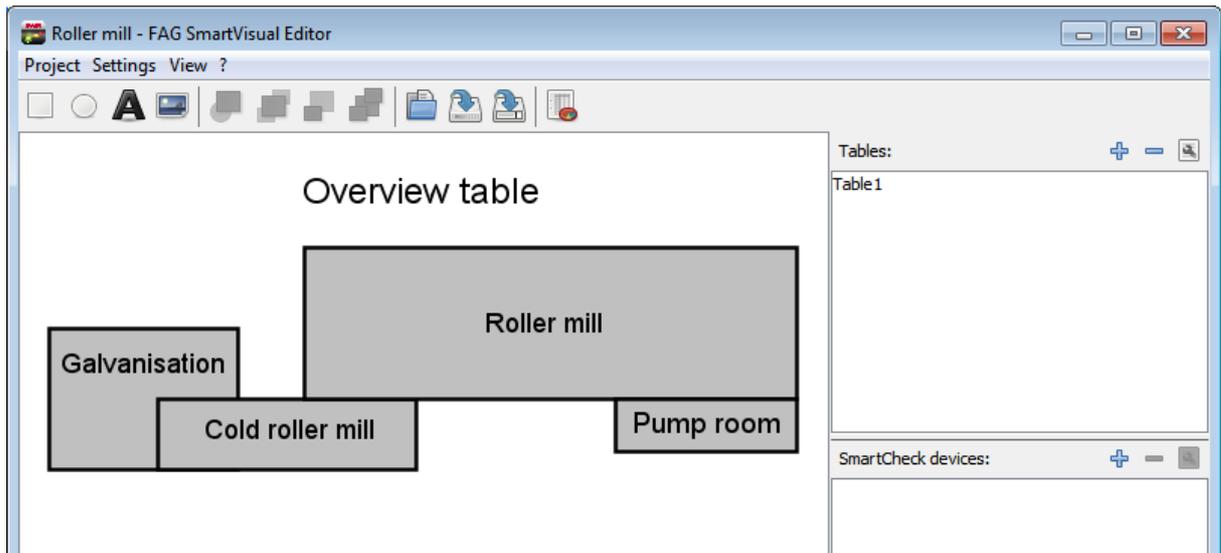
### Labelling elements

Text can also be added to identify elements:

- Click on Add text **A** in the tool bar.
- Double-click on the text element.
- In the Edit element dialog box, click on the Text tab.



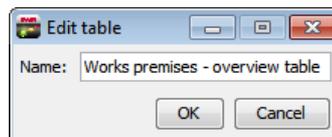
- Enter the relevant text (e.g. "Roller mill").  
You also have the option of adjusting the font, font size and font colour.
- Click on OK.
- Move the text element to the required position.



### Renaming a table

Now rename "Table 1":

- Select the entry "Table 1" from the Tables section.
- Click Edit  in the tool bar.
- Give the table a clear name (e.g. "Works premises - overview table").
- Click on OK.



## 2. Adding and configuring further tables

Now set up a new table for the pump room and create a plant visualisation using rectangular or elliptical elements, or using an image.

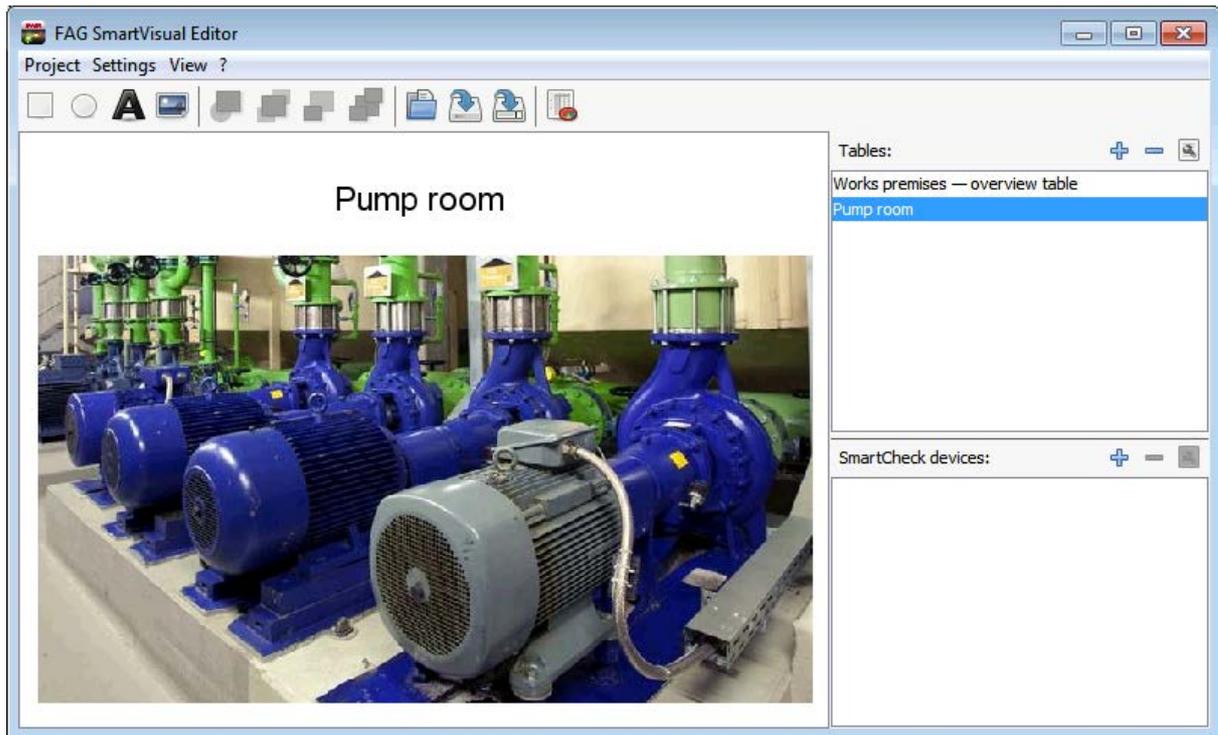
- Set up a new table by clicking on Add in the  Tables section.
- Give the new table a name (e.g. "Pump room").

Configure the plant using elements or add an image:

- Click on Add image  in the tool bar.
- Select an image, e.g. a photo of the plant. The image must be in one of the following formats: JPG, BMP or PNG.
- Click on Open.

The image is automatically positioned in the foreground.

- Move the image into the required position.



There are no restrictions on the number of tables containing visualisation elements you can create. The next steps explain how to position the individual SmartCheck devices and link visualisation tables together.

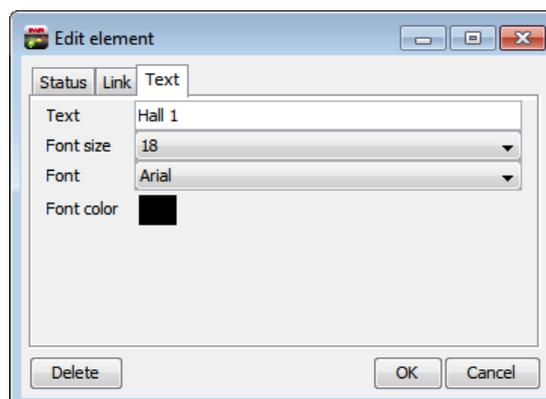
### 3. Positioning SmartCheck devices

The position of the individual SmartCheck devices can now be marked in the table using rectangular or elliptical elements, and the devices labelled accordingly.

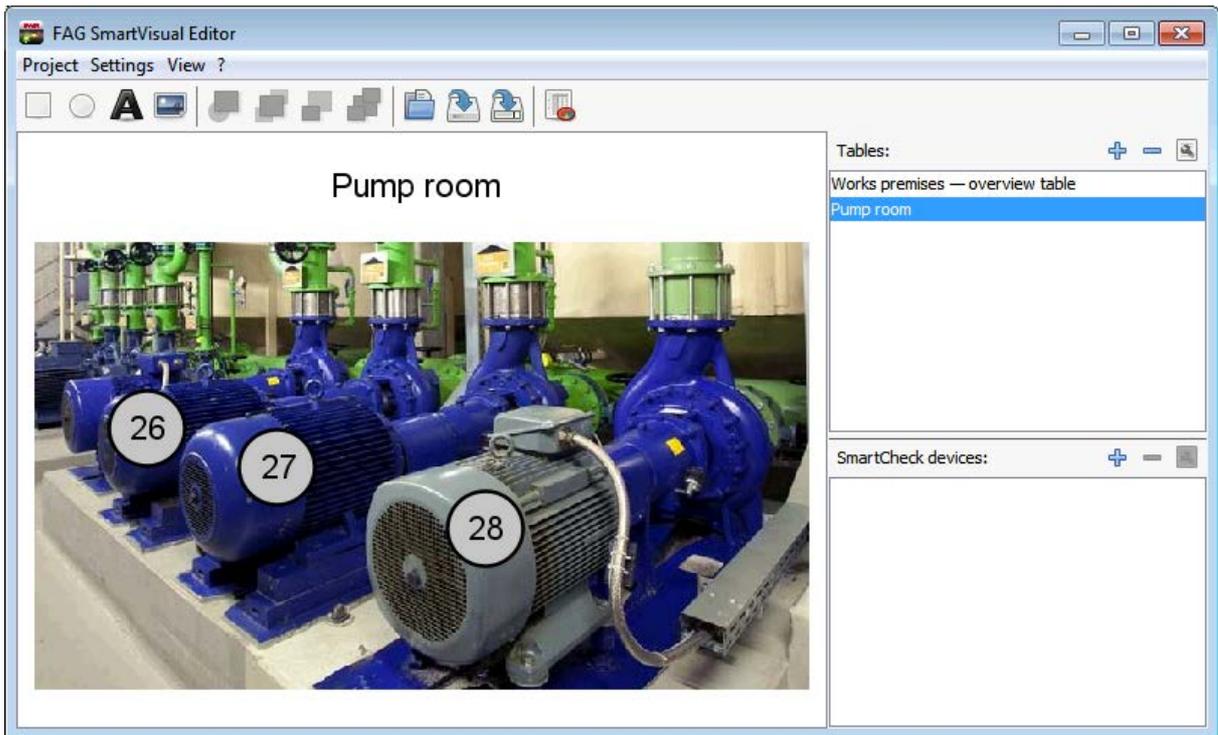
- To do so, click on Add ellipse, for example.
- Click on the ellipse and, keeping the mouse button held down, drag it to the required position.

Text can be added to label the elements:

- Click on Add text.
- Double-click on the text element.
- In the Edit element dialog box, click on the Text tab.



- Enter the relevant text (e.g. "26" for SmartCheck device 26). You also have the option of adjusting the font, font size and/or font colour.
- Click on OK.

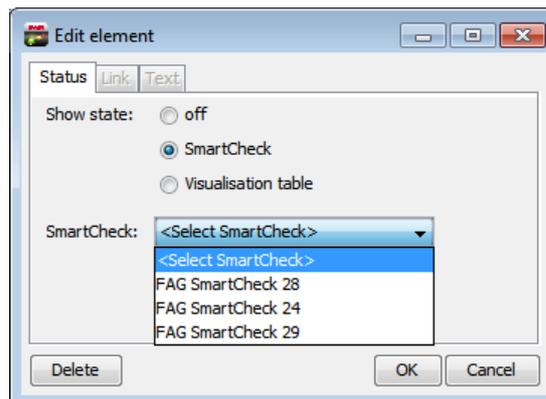


Text elements and images cannot display the alarm status of a SmartCheck device. Please only use rectangular or elliptical elements to display the alarm status.

#### 4. Linking SmartCheck devices

The elements that visualise the SmartCheck devices can now be linked to the individual devices.

- To do so, double-click on an elliptical or rectangular element.
- In the Edit element dialog box, click on the Status tab.



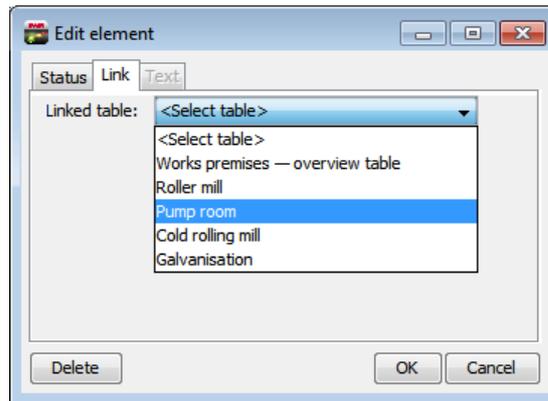
- Select SmartCheck under "Show state" and
- select the corresponding SmartCheck device from the list.
- Click on OK.

The element is now linked with a SmartCheck device. If using the SmartVisual Viewer or viewing the table in the SmartVisual app, the alarm status of the SmartCheck device is displayed automatically.

#### 5. Linking tables

If you want to link to the hall plan from the plant overview using the SmartCheck devices, and thus display the alarm status of the SmartCheck devices in the overview plan, this can be configured in the Edit element dialog box.

- To do so, double-click on an elliptical or rectangular element.
- In the Edit element dialog box, click on the Link tab.



- Select a table from the list.
- Click on OK.

The individual tables are now linked with one another. Using the SmartVisual Viewer or the optional SmartVisual app, it is possible to automatically switch <sup>25</sup> between the various tables.

## 6. Saving a project

- Select File > Save as or click on  in the tool bar.
- Select the folder in which the project is to be saved from the Save in drop-down list.
- If you want to create a new folder for the project, click on the Create new folder button.
- Enter a name for the file in the File name field.
- Click Save.

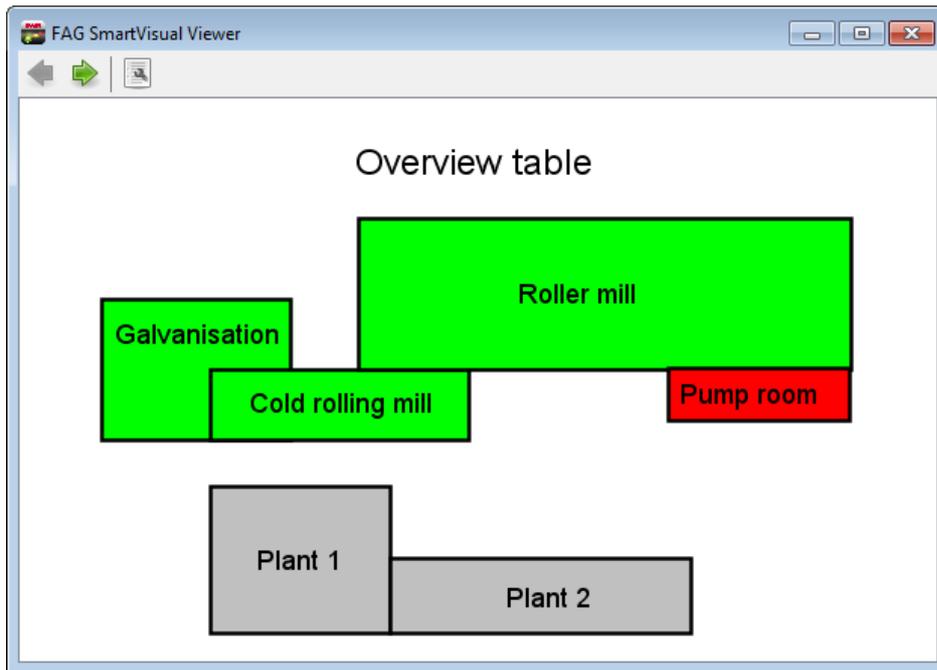


- To use the SmartVisual app, the project must be saved in the following folder: C:\Users\[User name]\AppData\Roaming\FAG\SmartVisual\configs. If this is not the case, the SmartVisual server will be unable to find the project files.
- As long as a project is not saved, an asterisk \* will be displayed next to the project name in the title bar of the SmartVisual software.

## 3.7 Displaying a project in the Viewer

Once the tables have been edited in the SmartVisual Editor, the project can be viewed in the SmartVisual Viewer. The current alarm status of the SmartCheck devices is also displayed here.

- In the tool bar of the SmartVisual Editor, click on Go to SmartVisual Viewer .
- The current project is displayed in the SmartVisual Viewer.



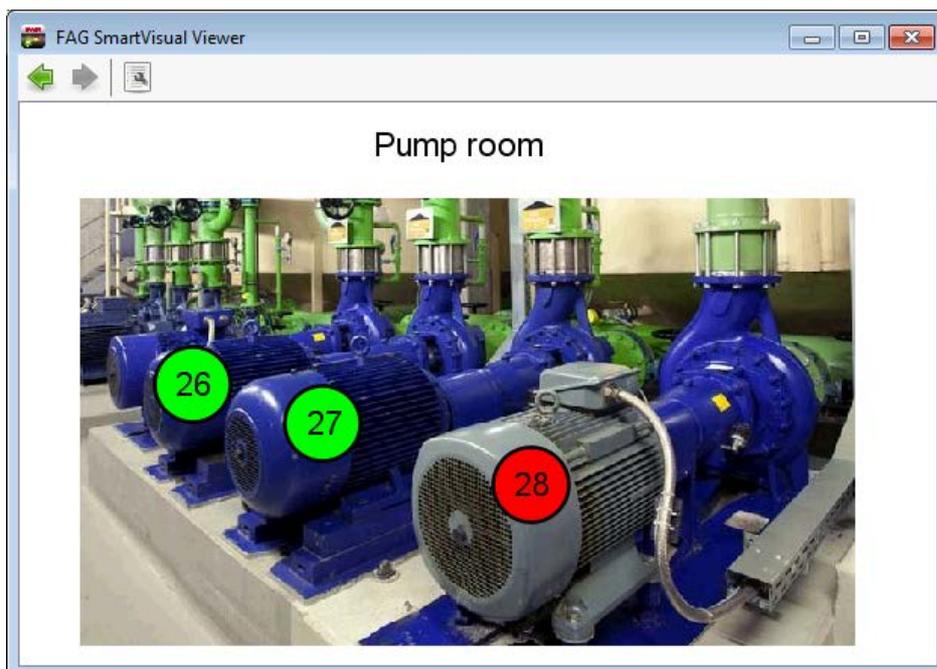
If an element links to the alarm status of a table containing several SmartCheck devices, the overall alarm status will always be displayed; in other words the consolidated alarm status of all devices.

### Switching between tables

If you have linked individual tables with one another, you can switch between them.

- Click on a linked element (e.g. "Pump room").

The table containing the photo of the pump room and the SmartCheck devices, together with their alarm statuses, is displayed.



To switch between the individual tables, click on the arrows  and .

### SmartCheck Opening devices

Clicking on an element that is linked with a device will automatically open the SmartCheck device in the browser.

- Double-click on a SmartCheck element.

The following screenshot shows a sample status page of a SmartCheck device in the SmartWeb software:

The screenshot displays the FAG SmartWeb interface. At the top, it shows 'Connected to : FAG SmartCheck' and 'Logged in as : admin'. The main content area is titled 'Characteristic value status' and shows 'Name : Peak-peak — acceleration (high vibration values)'. It displays 'Current measured value : 0.040905 g', 'Current alarm status : no alarm', and 'Last measurement : 2011-10-11 11:26:48'. Below this is a graph with a color-coded bar (green, yellow, red) and a time-axis from 20:00:00 to 08:00:00. A context menu is open over the graph, listing actions like 'Reset alarm', 'Alarm settings', and 'Start learning mode'. The bottom section shows 'Sensor information' with details for Vibration sensor, Temperature sensor, Voltage, Load, Digital input (pulses), and Digital input (speed). A logbook at the bottom shows a list of events with columns for Category, Created, Modified, User, and Message.



- If you cannot access the SmartWeb software, please check whether all requirements for starting up the software have been met. For more information, please see the section entitled First start-up in the handbook for the SmartWeb software.
- Using the SmartVisual app, the plant visualisation can even be displayed on mobile devices. The SmartVisual app is available from the App Store. Further information is available here [\[32\]](#).

### Switching to the SmartVisual Editor

- Click on Go to SmartVisual Editor  in the tool bar.

## 3.8 Settings

### 3.8.1 Changing the language

Here you can set the language in which the SmartVisual software interface is displayed. The SmartVisual software is provided in English and German by default.



Changes only apply to SmartVisual. It is not possible to change the language of the optional SmartVisual app.

### Changing the language

Here you can set the language in which the SmartVisual software interface is displayed.

- In the menu, click on Settings > Language and
- select a language.

The SmartVisual software must be restarted for the changes to the language settings to become effective.

### Exporting the language file

- In the menu, click on Settings > Language and
- select Export language file.
- Enter the directory and file name under which the language file is to be saved.

The downloaded language file can be found in the specified directory.



The CSV file is structured as follows:

```
# autogenerated from smartvisu
# Tue Oct 15 07:39:12 CEST 2013
ID;Deutsch;English
about.btn.activate;Aktivieren;Activate
about.btn.close;Schließen;Close
```

### Editing the language file

The SmartVisual language file can easily be edited in an editor program or in OpenOffice Calc to add an extra language, for example. If you are editing the language file in a spreadsheet program, please be aware that the first column, the text ID and the subsequent columns retain the individual translations.

1. Start OpenOffice Calc.
2. Open the language file in CSV format.
3. Configure the following settings in the text import wizard:
  - Character encoding: UTF-8
  - Delimiter: ; (semi-colon)
  - Text separator: none (blank)
4. Click on OK.

The language file is displayed as a spreadsheet.

	A	B	C	D
1	# autogenerated from smartvisu			
2	# Tue Apr 01 08:30:26 CEST 2014			
3				
4	<b>ID</b>	<b>Deutsch</b>	<b>English</b>	<b>New language</b>
5	about.btn.activate	Aktivieren	Activate	
6	about.btn.close	Schließen	Close	
7	about.email	E-Mail	Email	
8	about.firmname	FAG Industrial Services GmbH	FAG Industrial Services GmbH	
9	about.general	Allgemeine Anfragen	General Enquiries	
10	about.general.mail	industrial-services@schaeffler.com	industrial-services@schaeffler.com	
11	about.general.tel	+49 (0) 2407 9149-66	+49 (0) 2407 9149-66	
12	about.internet	Internet	Internet	
13	about.internet.url	http://www.schaeffler.de/services	http://www.schaeffler.com/services	
14	about.tecsupport	Technische Unterstützung	Technical Support	
15	about.tecsupport.mail	support.is@schaeffler.com	support.is@schaeffler.com	
16	about.tecsupport.tel	+49 (0) 2407 9149-99	+49 (0) 2407 9149-99	
17	about.tel	Telefon	Telephone	
18	about.title	Info	Info	
19	about.version	Version	Version	
20	colorChooser.title	Farbauswahl	Colorizer	
21	optionsFrame.button.cancel	Abbrechen	Cancel	
22	optionsFrame.button.ok	OK	OK	
23	optionsFrame.error.portOutOfRange	Die Ports müssen zwischen 1024 und 65535	Ports must be between 1024 and 65535.	
24	optionsFrame.label.smartCheckConfig	Gerätekonfiguration	Device configuration	
25	optionsFrame.label.smartCheckSearch	Gerätesuche	Device search	
26	optionsFrame.label.udpPorts	UDP-Ports für:	UDP ports for:	
27	optionsFrame.title	UDP-Ports einstellen	Set UDP ports	



- Before editing the file, make sure that a back-up copy is saved.
- The language file contains placeholders such as %d and %s. These must not be changed.
- If you are editing the file in Microsoft Excel, it will not be possible to import the file again at a later point. Please use OpenOffice Calc.

5. Create a column for the language you wish to add (e.g. 'New language').

6. Translate the text.

7. Save the language file in CSV format with the settings from point 3.

Check that the CSV file has saved in the correct format before importing into the SmartVisual software.

#### Importing a language file

Once you have edited the language file, you can import it back into the SmartVisual software.

- In the menu, click on Settings > Language and
- select Import language file.

The new language file is used once the SmartVisual software has been restarted.

### 3.8.2 Changing the status update interval

Here you can define the intervals at which the alarm status of the SmartCheck devices in the SmartVisual Viewer is queried. The following options are available: 10 seconds, 1 minute, 5 minutes and 10 minutes.

### 3.8.3 Setting the UDP ports

Here you can set the UDP communication ports for the device search and device configuration. The port for the device search is set to 19002 and the port for the device configuration is set to 19003 by default.



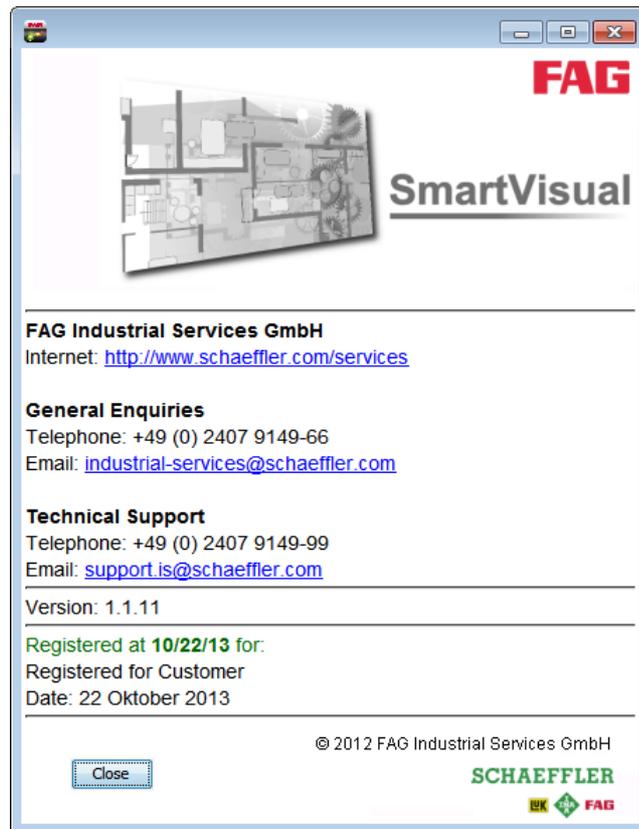
The following basic prerequisites apply for connecting to the computer:

- The communication protocol TCP must be enabled on port 80 and the UDP communication protocol enabled on ports 19002 to 19003 used in existing firewalls in your network.
- If the SmartCheck device has not been assigned an address via DHCP, it will have the IP address 192.168.1.100 by default. In this case, the IP address of your computer must be within the 192.168.1.x range.
- During the initial installation of the SmartVisual software, the settings for the UDP ports are specified automatically. These automatic settings are generally correct

If there are any problems, please contact your system administrator.

### 3.9 Further information

Under ? > Info, you will find information on support and the current program version:



The following information is available:

- Contact: Here you will find detailed contact information, both for general enquiries and for support.
- Version: Here you will find details of the current program version. Please include your version number during any support requests.

Here you also have the following options:

- Click on Activate to register for the 60-day test version of the SmartVisual software.
- Click on Close to close the dialog box.

#### Information and services for FAG SmartCheck

We offer a unique range of services for FAG SmartCheck - from training courses, technical mentoring during the induction phase and expert support with diagnostic issues, right through to customised service agreements including remote monitoring and reporting.

A selection of our comprehensive range of products and services for FAG SmartCheck can be found on the Internet at [www.FAG-SmartCheck.com](http://www.FAG-SmartCheck.com).

### 3.10 Registering the software

You can use the SmartVisual software for a period of 60 days free of charge. After the 60 days, the software is only partially usable. So you can no longer store projects and the alarm status of the SmartCheck devices will no longer be updated.

If you buy the unlimited full version, you can continue using the software. Uninstalling the trial version is not necessary and all projects, that you have created during the test phase remain. You can unlock the SmartVisual software easily by a sent activation file. You only need the serial number that you will find on the supplied CD-Rom.

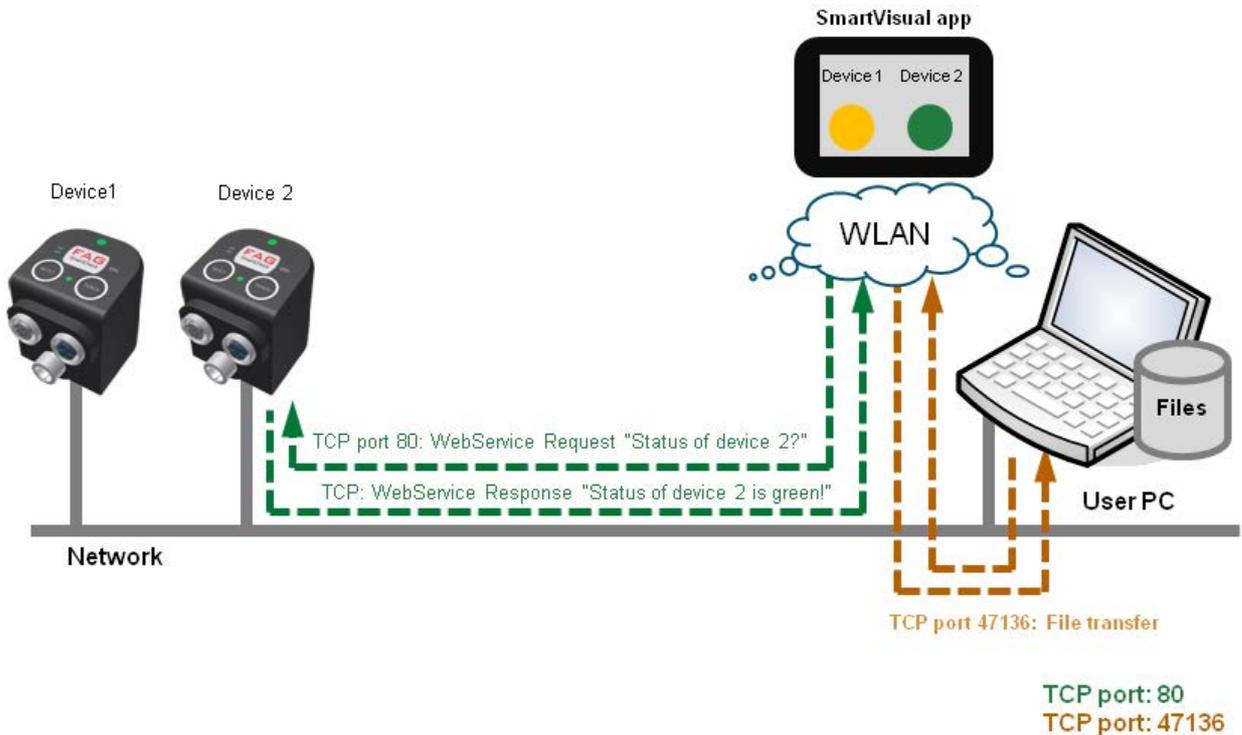


- Please have the serial number ready of your SmartVisual software CD-ROM.
- Call our support [40](tel:40) or send an e-mail to [industrial-services@schaeffler.com](mailto:industrial-services@schaeffler.com).  
You will receive an activation file by e-mail. Please put the file in a save place.
- Save the activation file to the computer on which the SmartVisual software is installed.
- Start the SmartVisual software.
- Click on the menu bar on ? > Info.
- Select Activate and
- choose the activation file.

Now you can use the SmartVisual software without restriction.

## 4 About the SmartVisual app

The SmartVisual app is available for mobile devices such as smartphones and tablets that run on the Android or iOS operating system. Using the SmartVisual app, you can track the alarm status of individual SmartCheck devices directly on your mobile device. To do so, your projects must be downloaded from the SmartVisual software. This process must only be performed a single time. Once your projects have been downloaded, the SmartVisual app will automatically query the alarm status of the individual SmartCheck devices at regular intervals. From this point on, there is no need for the SmartVisual server to be running.



*Standard way in which the SmartVisual app communicates with the SmartVisual server and the FAG SmartCheck devices*

The mobile version of the SmartVisual software - the SmartVisual app - can be acquired for mobile devices from the App Store.

To make use of the SmartVisual app, proceed as follows:

1. Install the SmartVisual app on your mobile device.
2. Establish a connection to the SmartVisual server.
3. Download the relevant projects from the SmartVisual server.



- The mobile version of the SmartVisual software - the SmartVisual app - can be acquired for mobile devices from the App Store.
- The SmartVisual app is available in English and German.

### 4.1 System requirements



Please note the system requirements [\[7\]](#) for the SmartVisual software.

The SmartVisual app can be used on all smartphones and tablet PCs if the following requirements are met:

#### General requirements

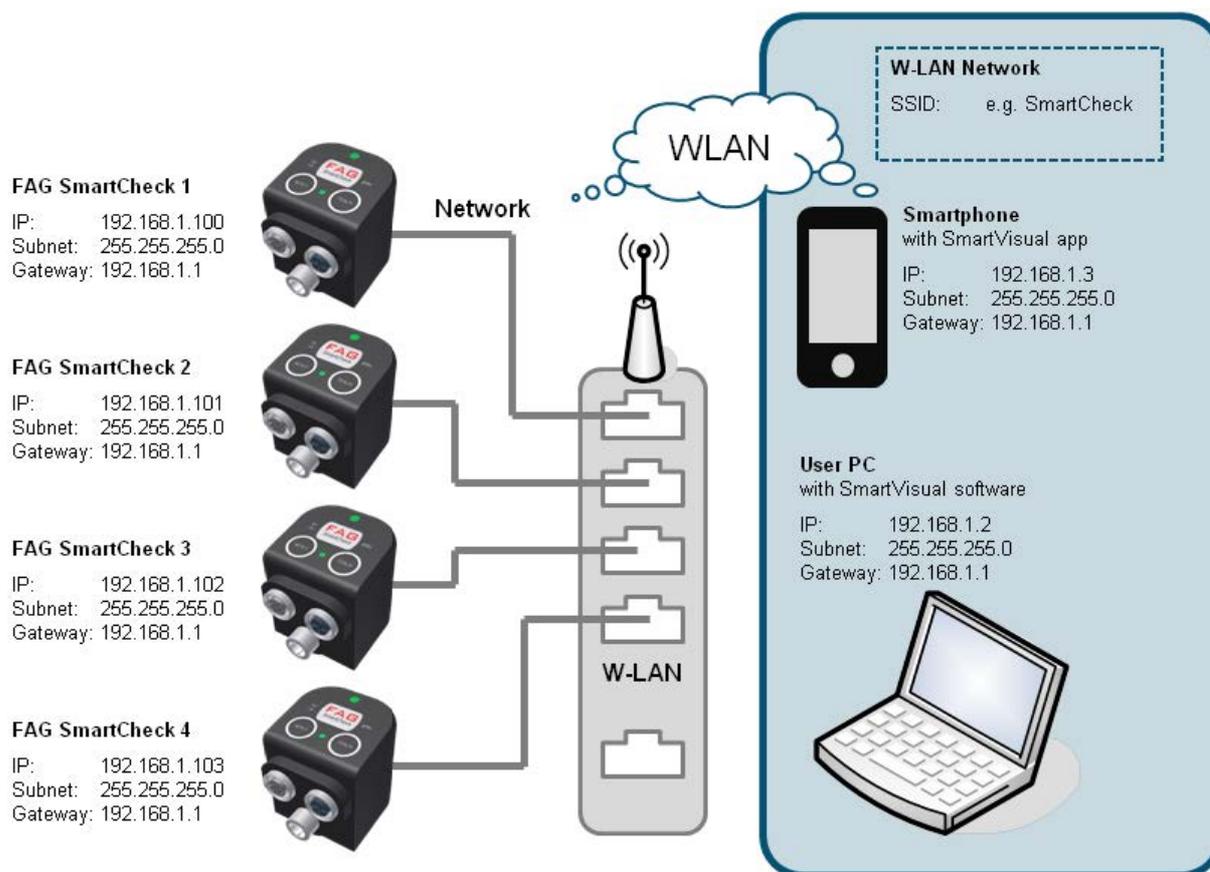
- iOS version 3.2 or higher
- Android version 2.3 or higher

### Other requirements

- WLAN
- Google account/iTunes account

### Requirements for establishing a connection

- To access the SmartVisual server using a mobile device, TCP port 47136 of the computer's Windows firewall must be enabled.
- The proxy setting in Internet Explorer must be set to "Automatic search".
- If the IP address is not assigned to the FAG SmartCheck via DHCP, the default IP address is 192.168.1.100. In this case, the IP address of the computer must be in the 192.168.1.x network range.



## 4.2 Installing the app

You can download the SmartVisual app from the Google Play Store (Android devices) or the Apple App Store (iOS devices).

### Installing the SmartVisual app

#### Installing the SmartVisual app on Android devices

- Install the SmartVisual app from the Google Play Store.

#### Installing the SmartVisual app on iOS devices

- Install the SmartVisual app from the Apple App Store.

### Deleting the SmartVisual app

Click Delete to completely remove the SmartVisual app, together with the corresponding licenses and all associated data, from your device.

## 4.3 Starting the app and establishing a connection to the server

Now start the SmartVisual app and establish a connection to the SmartVisual server.

### Starting the SmartVisual app

Once you have installed the SmartVisual app, you can launch the app from the app overview.

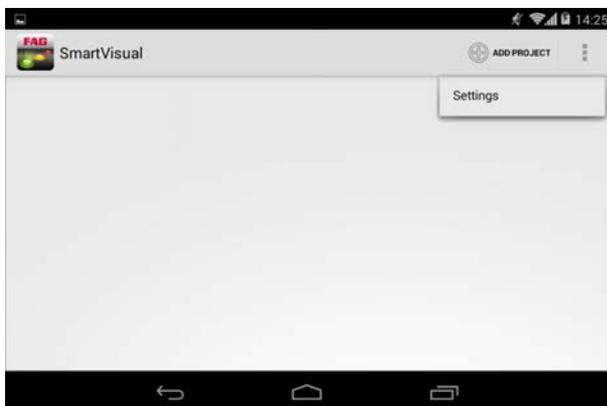
- Start the SmartVisual app by clicking on the  symbol.

### Setting up the SmartVisual app

Next, you must enter the IP address of the computer on which the SmartVisual server is installed into the SmartVisual app. Configure the app settings as follows:

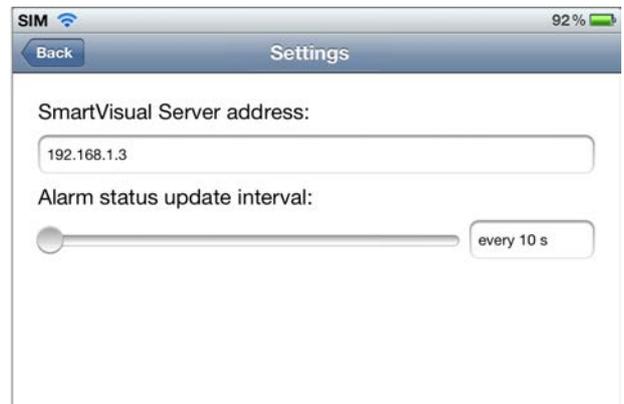
#### Android operating systems

- Click on  and
- select Settings.



#### iOS operating systems

- Click on  and
- select Settings.



- Enter the IP address of the computer on which the SmartVisual server is installed (e.g. 192.168.1.3).
- If necessary, adjust the update interval for the SmartCheck alarm status.
- If necessary, adapt the UDP ports  for the device search and device configuration.
- Go back.

## 4.4 Downloading a project

Once you have entered the IP address of the SmartVisual server, you can download the projects that you have created in the SmartVisual software.



- In order to download the projects, the computer on which the SmartVisual software is installed must be accessible and the SmartVisual software must be active. If the SmartVisual software is active, the SmartVisual program symbol will be displayed in the status bar.



- The projects you have created using the SMV software must be saved in the following folder: C:\Users\[User name]\AppData\Roaming\FAG\SmartVisual\configs. If this is not the case, the SmartVisual server will be unable to find the project files.

Android operating systems

iOS operating systems



- Click on Add project .

- Click on Add .



- Select one or more projects from the list by activating the checkbox.
- If necessary, click Refresh  to load the list from the SmartVisual server.
- Click Download.
- Go back.

- Select a project from the list.
- Click Save.
- Go back.

The project is downloaded to your mobile device.

Access to the SmartVisual server is not required for the subsequent steps.

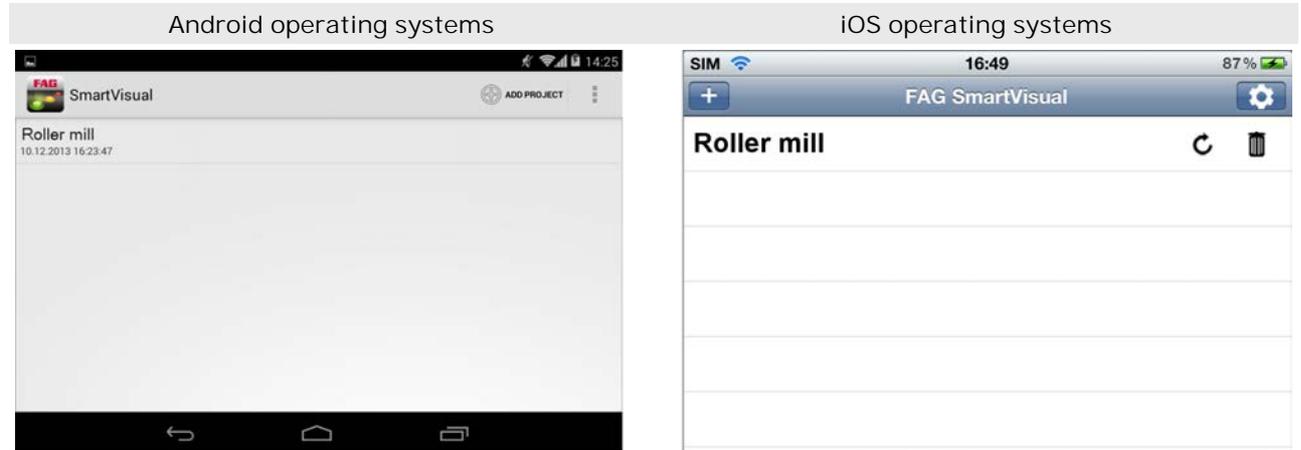


- To refresh the projects in the SmartVisual app, the SmartVisual server must be accessible. If the server is available, the app will automatically detect the new version and ask whether you would like to update the project.
- To remove a project from the SmartVisual app, click "Settings" and select Remove from list .

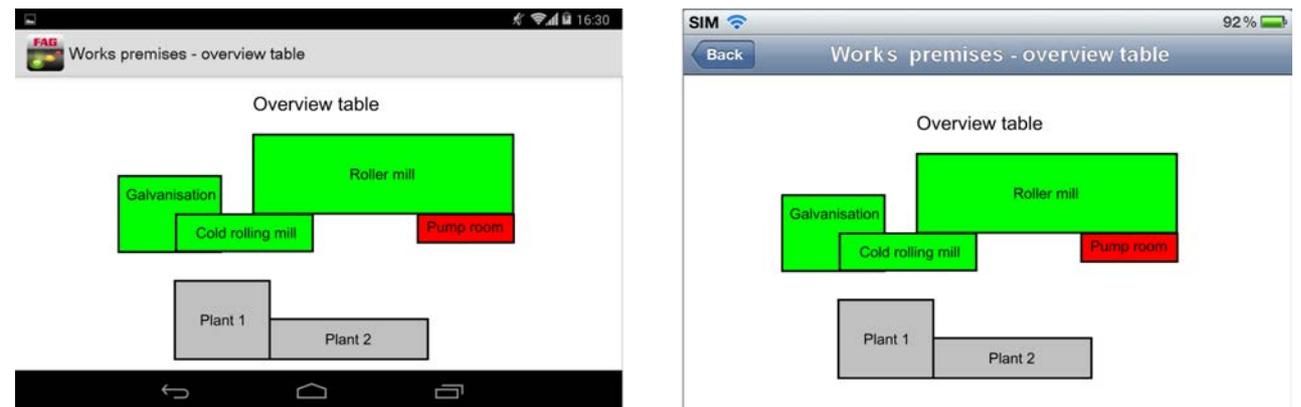
## 4.5 Opening a project

In the next step, you can open downloaded projects, scroll through the individual tables and access the SmartCheck devices in the browser.

### Opening a project



- Click on the project that you would like to open (e.g. "Roller mill").



The overview table is displayed. You can then scroll through the individual linked tables.

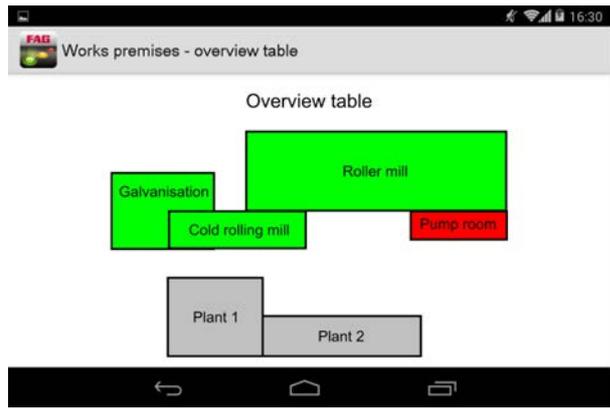


If an element links to the alarm status of a table containing several SmartCheck devices, the overall alarm status will always be displayed; in other words the consolidated alarm status of all devices.

### Scrolling through the tables

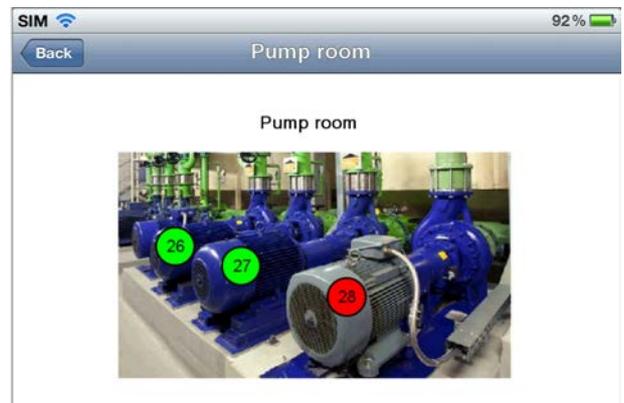
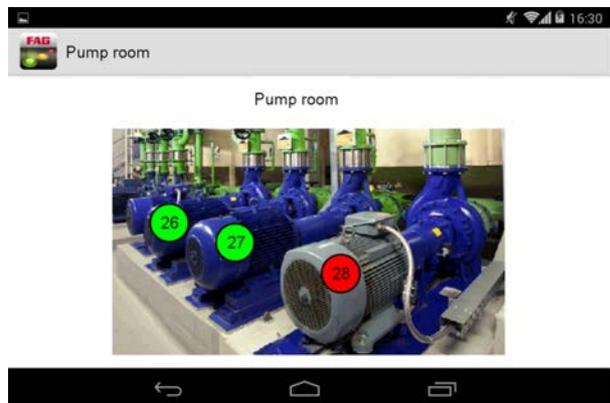
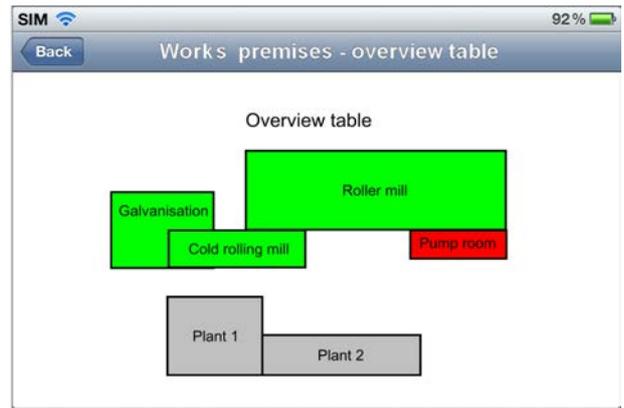
If you have linked individual tables with one another, you can switch between them.

Android operating systems



- Click on the table you would like to switch to (e.g. "Pump room").

iOS operating systems



The "Pump room" table is displayed.

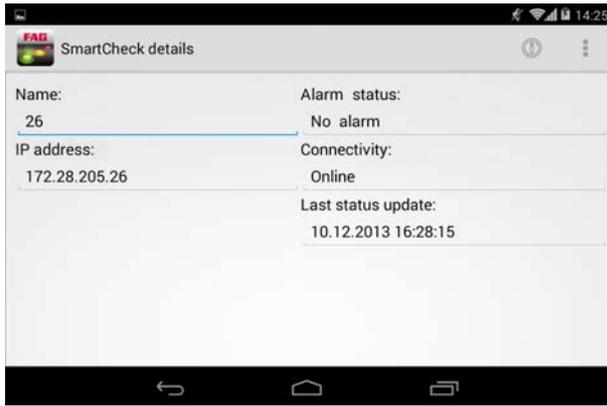
In the case of elements linked to SmartCheck devices, the current alarm status  is displayed automatically.

Opening SmartCheck devices

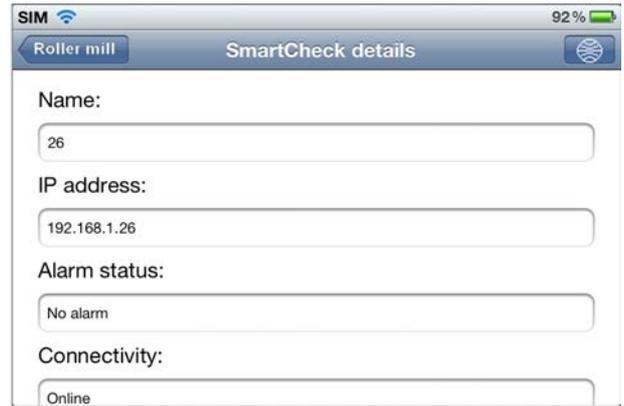
Clicking on an element linked to a device will display the device details. Here you can automatically open the SmartCheck device in the relevant browser.

- Double-click on a SmartCheck element.

## Android operating systems



## iOS operating systems



The SmartCheck device details are displayed together with the following information: name, IP address, alarm status, connectivity and last alarm status update.

- Click Open .

- Click Open .



The SmartWeb software for the SmartCheck device is opened in the browser. Here you can gain a quick overview of the device status. For a more exact analysis, please use the SmartWeb or SmartUtility Viewer software installed on the PC. The following screenshot shows a sample status page of a SmartCheck device in the SmartWeb software:

The screenshot displays the FAG SmartWeb interface. At the top left is the FAG SmartWeb logo. On the top right, it shows 'Connected to: FAG SmartCheck' and 'Logged in as: admin'. The main interface is divided into several sections:

- File Edit Measurement data Go to Help**: A navigation bar at the top.
- Status**: A sidebar on the left with a tree view of 'Characteristic values' including 'Standard measuring job', 'Crest factor — accelers', 'ISO 10816-1 (2 Hz to 11 Hz)', 'Peak-peak — acceleration', 'Periodic', 'RMS br', 'RMS br', 'Temper', and 'Wellha'. Below this is an 'Actions' section with links for 'Create new measurement job' and 'Show measurement jobs', and an 'Areas' section with buttons for 'Status', 'Measurement data', 'Live view', 'Configuration', 'User management', and 'Log out'.
- Characteristic value status**: The main content area showing details for 'Name: Peak-peak — acceleration (high vibration values)'. It includes 'Current measured value: 0.040905 g', 'Current alarm status: no alarm', and 'Last measurement: 2011-10-11 11:26:48'. Below this is a horizontal bar chart with a color gradient from green to red. A context menu is open over the chart with options: 'Reset alarm', 'Reset all alarms', 'Alarm settings', 'Start learning mode', 'Start learning mode for all', 'Measurement jobs', 'Live view', and 'Measurement data'.
- Information**: A table of system metrics:
 

<b>Last config change :</b>	2011-07-14 10:06:51	<b>Vibration sensor</b>	0.005141 g (Acceleration)
<b>Last measurement :</b>	2011-10-11 11:26:48	<b>Temperature sensor</b>	39.0 °C (Temperature)
<b>System start time :</b>	2011-10-10 11:05:34	<b>Voltage</b>	9.0634 V (Voltage)
<b>Free memory capacity :</b>	54.402 MB of 70.246 MB free	<b>Load</b>	99.993 % (Load)
		<b>Digital input (pulses)</b>	- - (No unit)
		<b>Digital input (speed)</b>	- RPM (Frequency/speed)
- Logbook**: A table at the bottom showing system events:
 

Category	Created	Modified	User	Message	Edit
Information	2011-10-11 11:26:10	2011-10-11 11:26:10	system	User admin logged in via 172.28.204.146	
Warnings	2011-10-11 11:06:08	2011-10-11 11:06:08	system	Standard measuring job: Alarm status changed from "Pre-alarm" to "Main alarm"	
Information	2011-10-11 11:04:15	2011-10-11 11:04:15	system	User admin logged in via 172.28.204.146	
Warnings	2011-10-11 09:53:54	2011-10-11 09:53:54	system	Standard measuring job: Alarm status changed from "Main alarm" to "Pre-alarm"	
Warnings	2011-10-11 09:52:01	2011-10-11 09:52:01	system	Standard measuring job: Alarm status changed from "Pre-alarm" to "Main alarm"	
Warnings	2011-10-11 09:02:51	2011-10-11 09:02:51	system	Standard measuring job: Alarm status changed from "Main alarm" to "Pre-alarm"	
Warnings	2011-10-11 09:00:57	2011-10-11 09:00:57	system	Standard measuring job: Alarm status changed from "Pre-alarm" to "Main alarm"	



If you cannot access the SmartWeb software, please check whether all requirements for starting up the software have been met. For more information, please see the section entitled First start-up in the handbook for the SmartWeb software.

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## 5 Manufacturer/support

### Manufacturer

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We provide support services for the FAG SmartCheck device and related software products. A detailed description of the type and scope of the support services we provide can be found online at [www.FAG-SmartCheck.com](http://www.FAG-SmartCheck.com).



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